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GRADUATE COLLEGE

THE STRUCTURE OF THE IMMEDIACY - NON-IMMEDIACY

PHENOMENON IN VERBAL BEHAVIOR:

AN EXPLORATORY STUDY

A DISSERTATION

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ELIZABETH RAUH BETHEL

Norman, Oklahoma

1974

THE STRUCTURE OF THE IMMEDIACY - NON-IMMEDIACY

PHENOMENON IN VERBAL BEHAVIOR:

AN EXPLORATORY STUDY

APPROVED BY

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DISSERTATION COMMITTEE

The writing of a dissertation is the product of many varied sources and contributions. Only a few of those are listed in the bibliography. The countless hours of conversation and cogitation are not conducive to annotation, yet must be noted. Without fellow graduate students and patient professors, who both listened and contributed their own ideas, this project could not have begun.

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## INTRODUCTION

This study seeks to determine the structure of verbal behavior within the marital context. The theoretic rationale for the investigation has been drawn from Turner's (1970) description of the "bonding" phenomenon which occurs within this context. As explicated in the present study, the rationale is conceptually similar to the broad generic term within small group research termed group cohesion; and it will be argued that the family unit stands as a unique type of small group. Thus the present study approaches the family, and more specifically the husband-wife dyad, as a specific configuration within the broad area of small groups studies, one which can be defined in terms of context or setting.

The legitimacy of the investigation of one member of this group (the female) is demonstrated within the discussion of Turner's bonding framework. As Turner has suggested, one individual may be viewed as "bonded" to the context of the marital relationship as well as to the other member of the dyad, the spouse. Both cases of bonding, he argues, are facilitated by an initial interpersonal attraction between the pair and are perpetuated by the establishment of ongoing bonds, which he terms "cresive." This generalization regarding the marital relationship is supported by evidence from the study of small group cohesion.

Examination of the structure of verbal behavior within this context was conducted with a modified form of Wiener and Mehrabian's (1968) immediacy - non-immediacy content analytic category system. The study was facilitated by the random selection of ninety-one married women from the University of Oklahoma married student housing centers during the summer of 1973. Subjects were asked to respond to fifteen cartoon-like drawings depicting situations commonly encountered within the marital context as well as two criterion measures of psychological anxiety and marital adjustment. Their responses to the drawings were then content analyzed to acquire the raw data for the immediacy - non-immediacy category system by a computerized scan system. Factor analyses of the frequency counts derived from the content analysis failed to reveal a systematic structure in the phenomenon.

The structure for this study is as follows: Chapter I presents a theoretic rationale for the examination of an affective or attitudinal state within the specified context and includes a review of literature relevant to verbal behavior and affective psychological states. Due to the exploratory nature of the study no formal research hypotheses are offered; three informal expectations are set forth as guides for the analysis of the data. Chapter II outlines the method of data gathering and analysis. Chapter III summarizes the results of the data analysis and discusses those results in terms of the expectations set forth in the first chapter. Chapter IV summarizes the study, critically assesses the methodological issues which are involved in such a study, and offers suggestions for further study designed to overcome shortcomings encountered in this investigation.

## I

### THEORETIC RATIONALE

#### Historical Overview

One of the central concerns of the social and behavioral sciences has been man's affective relationship with his physical and social environment. This concern has spanned broad and varied contexts. Anthropologists, particularly from the Boasian tradition, have sought to determine the relationship between geography and cultural forms. Eighteenth and Nineteenth Century social philosophy, from Rousseau to Burke to Marx, speculated about the adaptive and affiliative relationship between the economic and political structures of society. The emphasis was on the individual's estrangement from the social structures of his own creation. At the heart of Freudian psychology is the affective adaption of the psychic mechanisms which struggle for expression against a pervasive and dictatorial social norm. Indeed, man's inquiry into the nature of man, whether in the realm of the humanities, philosophy, biology or social science, has been concerned with the adjustment between the external and internal human environments. Estrangement, restraints on the individual, adaption to social demands, alienation and reconciliation with the social environment have historically been central themes in the social sciences.

From this basic concern a large variety of concepts has emerged providing viable conceptual tools in the conduct of scientific inquiry. Such concepts as alienation, attitudes, group norms, and role expectations have grown from this basic underlying concern with the affective adjustment process of the human being to the external environment. During the Nineteenth Century the central concern of social philosophy was directed to the issue of historical change in tradition-bound social orders. Nisbet (1966) notes:

. . . beginning with the conservatives in their general distrust of modernism, is the tragic view of life set in time perspective. It is a view that has drawn its melancholy forecast of the future, not from extraneous fortuitous factors, but from the very substance of history, from the very forces that the rationalists had hailed as promising liberation of the new empire of reason. In this view history is conceived as being periodically seized by deep moral crises which do not -- as the thinkers of inexorable progress argued -- automatically resolve themselves but remain instead to haunt and mock man's hopes of secular salvation (p. 268).

The Twentieth Century refocused this concern, giving particular note to the adaptive abilities of less powerful groups. Allport (1968) notes the focal concern in this phase of behavioral science as consistent with the basic value structure of a democratic social ideology:

Social psychology began to flourish soon after the First World War. This event, followed by the spread of Communism, by the great depression of the 1930's, by the rise of Hitler, the genocide of the Jews, race riots, the Second World War and the atomic threat, stimulated all branches of social science . . . and led to a burst of creative effort that added much to our understanding of the phenomena of leadership, public opinion, rumor, propaganda, prejudice, attitude change, morale, communication, decision-making, race relations, and conflicts of values (p. 3).

The tracing of the development of the social and behavioral sciences reveals that while the conduct of inquiry into the various phenomena of

human behavior has become more specialized, the central underlying concern continues to be the nature of affective adjustment to one's social environment and the social or psychological correlates in this adaptive process.

Basic Assumptions and Concerns of  
the Present Study

The present study is grounded in concerns similar to those which constitute the historical past of the social sciences. A basis will be sought in this dissertation for quantifying and measuring the affective condition of participants to interaction within a specified social context. Specifically, this study will be directed to the measurement of the affective state of women within the social context of marriage. The assumption underlying this focus is that this affective adaptive state can be inferred through one's verbal behavior. It is further assumed that this verbal behavior, if it is to provide a valid data base for such inference, must be directly salient to the marital context.\* That is, we will argue that in order to validate the assumption of isomorphism between verbal behavior and an individual's affective cognitive state, the verbal behavior which serves as the data base must meet two essential requirements. First, the stimuli which elicit the verbal behavior must be salient to the subjects. The logical corollary of this assumption is that these stimuli must be framed within a broader social context.

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\*For an excellent discussion of the philosophical implications and requirements of validity see Cohen and Nagel (1934) and Kaplan (1964).

To satisfy these requirements, a conceptual basis will be established for viewing the family as a unique type of small group. As such, it can then be subjected to examination from the perspective of group cohesion, a variable which has been demonstrated to be highly salient in small group behavior. From this framework a currently undeveloped measure of affective cognitive states will be methodologically and empirically refined. This measure of closeness or estrangement which a person feels about the objects or persons which serve as referents in a communication has been termed immediacy - non-immediacy by Wiener and Mehrabian (1968). We will argue that this phenomenon, as Wiener and Mehrabian have described it, is conceptually similar to the more popular notion of group cohesion prevalent in the small groups literature.

This exploration within a specific social context is facilitated by Wiener and Mehrabian's statement of the immediacy hypothesis:

We hold that certain kinds of words or referent variations in the verbal content portion of communication can be used to infer something of the psychological relationship between the speaker and the object of his communication, his communication, or his addressee (1968, p. 3).

The notion implicit in the use of the term "relationship" is that the speaker has had experience in the past with the object of the communication, and that prior experience is operant in the formation of a definable affective or estrangement-directed psychological state.

In addition to the psychological state, however, there is also an implication in the hypothesis that the relationship is an ongoing one. As such, it is governed by norms which impinge on the relationship from the larger social world. That is, when the

hypothesis is moved from the experimental laboratory to the marital setting, consideration must be given to the nature of the marital relationship as a unique social entity as well as to the relatively individualistic notion of a person's affective psychological state.

The marital setting will be viewed as a salient interaction environment for the subjects. As a stable and enduring interaction environment, it can be viewed as a small group. This perspective establishes a conceptual basis for consideration of the immediacy - non-immediacy phenomenon as a measure of group cohesion, or marital adjustment. Thus the immediacy - non-immediacy phenomenon may be viewed as potentially containing two distinct elements. The first is a psychological or individually based phenomenon; the second is a social element, based on interaction of the individual woman within a specifiable context.

With these assumptions in mind, the present chapter will be directed to the development of a rationale for the conduct of such an inquiry. Initially, we will examine the nature of the family and marital structure in order to better understand the social context within which the study will be conducted. In this examination we will seek topical issues around which verbal behavior salient to the marital setting can be focused.

The development of a proper measuring instrument is essential to any such study. Wiener and Mehrabian (1968) have offered a content analytic category system which, when applied to verbal behavior, offers great promise for a study such as this. The present chapter will address the issue of the immediacy - non-immediacy continuum, as devised

by Wiener and Mehrabian (1968). Previous research with the continuum and category system will be examined and the present shortcomings of the category system explicated. The use of the category system to date has remained confined to laboratory experimentation. No attempt has been made to extend the use of the category system into ongoing interaction settings. This extension of research to the marital setting will be based on the subsequent discussion. Certain conceptual similarities will be noted between Wiener and Mehrabian's formulation of the immediacy - non-immediacy phenomenon and the notion of bonding (Turner, 1970) as central to the cohesive and enduring marriage. Thus a discussion of the category system and its underlying assumptions will be the second concern of the present chapter. The section will conclude with a statement of expectations which should emerge from the conclusion of the study as empirical and systematic facts. The following questions are posed: Are there specifiable verbal behaviors which are indicative of the degree of affective adjustment or estrangement within marital contexts? If so, how are the traits of these verbal behaviors organized empirically, and what appropriate interpretation devices can be employed to further the understanding of these organizations? It will be demonstrated that there is a logical basis for assuming that the organization of these verbal behaviors will fall into two broad categories, one psychological in nature and indigenous to the individual's internal affective state, the other social in nature and indicative of the affiliation or estrangement which typifies the relationship of the individual woman within the topically salient marital context.

The Family Unit: A Social Group

The role of the family in the larger social structure, as well as its function in the development of the individual, has been the subject of heated debates within the social sciences. Keller (1971) has suggested that such debates, while intellectually stimulating to their participants, offer little in the way of insights into the current marital structures of the Twentieth Century, their frustrations and their contradictions. Keller notes:

It is generally agreed that even in its ideal form, the industrial-urban family makes great, some would say excessive, demands on its members. For one thing, it rests on the dyadic principle or pair relationship which, as Georg Simmel observed long ago, is inherently tragic and unstable. . . the image of the couple, a major source of fusion and of schism in our society, is highly contradictory according to whether we think of the sexes as locked in love or in combat. . . . Held together by sentimental rather than by corporate bonds, the happiness of the partners is a primary goal although no one is very sure what happiness means nor how it may be achieved and sustained (pp. 5-6).

Despite the loss of traditional function and normative authority patterns, the family continues to persist as a more or less viable form of primary social organization; and remaining central to this social form, as Keller has observed, is the husband-wife dyad as its nucleus.

A number of generalizations can be made from the data of marital adjustment and happiness studies. Individuals with similar religious, socio-economic, educational, and cultural backgrounds seem to make better "adjustments" to marriage with each other than those couples with more disparate backgrounds. Couples who indicate familyistic or collectivistic-type value systems as opposed to individual-

istic values seem also to have a greater degree of marital adjustment. Leslie (1967), for example, summarizes the results of a plethora of investigations into the relationship between marital adjustment and social factors in the following way:

- (1) The greater the similarity in family backgrounds, the larger was the proportion of couples in the very high adjustment class.
    - (a) The husband's family background appeared more closely related to adjustment than did the wife's background.
    - (b) The economic and social status of the parents seemed less important for marital success than did other factors.
    - (c) Rural backgrounds for persons who migrated to the city were found to be more favorable than a childhood spent in either town or city.
    - (d) Differences in educational background or religious affiliation show no relation to marital adjustment. Church attendance, however, was associated with marital success.
  - (2) The domestic happiness of the parents was correlated with the marital adjustment of their children.
    - (a) Closeness of attachment and absence of conflict between parents and son showed a small positive relationship to marital adjustment.
    - (b) Size of family also was more important for the adjustment of the husband than for that of the wife. Two- to five-child families were more favorable than only-child families.
  - (3) Several factors relating to the couple's social type were found to be related to marital adjustment.
    - (a) Marriage between 28 and 30 years of age for men was found to be favorable. Very early marriages were unfavorable.
    - (b) Marriage success scores were positively associated with increased educational achievement for both spouses.
    - (c) Continuing to go to Sunday School until age 19 was associated with marital success. Marriage taking place in a church was also favorable.
    - (d) Having several friends of both sexes and belonging to organizations was associated with good adjustment.
    - (e) Residence in a suburb was more favorable than residence in an apartment or rooming house.
    - (f) The longer the period of intimate association before marriage, the greater were the chances for marital success.
    - (g) Security and stability of occupation were more important than income level.
    - (h) The desire for children was associated with good adjustment.
- (pp. 481-482).

This summary is a direct reflection of the massive Burgess and Cottrell (1939) investigation into the social correlates of marital adjustment. Efforts since then have not refuted the initial set of correlates. They have rather expanded the list to include premarital sexual behavior, use of drugs, and refinements of the relationship between social class and marital adjustment. Indeed, it would appear from the literature dealing with marital success/adjustment/happiness that the husband-wife dyad is not viewed as an isolated group. In many cases it is viewed as interdependent with a larger and more encompassing social context. It can analogously be viewed as a bonding or wedding of two social units or contexts into a single, new group. The success of the new group, and the happiness of the two individuals who initially constitute the core of that group, is dependent on prior social experiences and contexts.

Considerably less empirical attention has been given to the interaction process within the marital context that has been directed to the antecedents of marital adjustment. Turner (1970) is an exception to this apparent neglect, although there has been no attempt to extend his "bonding" notion beyond the present system which we will describe. According to Turner, bonding is multifaceted and indicative of a state of interdependence within an ongoing unit rather than a state of "happiness:"

If we speak of the presence of bonds that unite persons in a group as bondedness or interdependence, a high degree of interdependence does not necessarily signify a very harmonious relationship, nor does minimal interdependence indicate that conflict exists. Harmony and interdependence are related in a complex manner, but they are not identical properties. Conflict does not take place unless there are bonds to keep the antagonistic individuals interacting. . . . The

opposite pole from harmony is conflict, but the opposite pole from interdependence is indifference (p. 42).

In addition to this essentially social impetus and motivation in the bonding process, Turner also notes the presence of "task bonds" within the marital context (pp. 53-59). This, he explains, is the forming of a coalition in order to accomplish goals or ends which could not be achieved by efforts of either member of the marital dyad acting alone. Turner recognizes the importance of interdependence at both the socio-emotional and the task-oriented levels of marital behavior. The relationship between them is clearly explicated in his division of the types of bonds which must be formed and perpetuated within the family setting. With reference to the social environment, he notes: ". . . in most organizations the most effective bonds holding members together are the gratifications that come from membership in the group as such" (p. 49). These gratifications are, for the most part, based on some type of interpersonal attraction, operant at all levels and in all sizes of groups. In addition to these social and interpersonal gratifications, however, the task environment of the family group is not centered on a single monumental task such as might be found in laboratory or organizational investigations of group processes. Rather, "the family is typically held together less by the prominence of a single shared activity than by the cumulative effect of a few major task interdependencies and a large number of minor collaborations" (Turner, p. 55). Membership gratification and task bonds constitute that dimension of the marital adjustment/happiness/cohesion phenomenon which is socially oriented. That is, the emphasis is on the extraneous factors which operate in

such a way as to create an environment conducive to the establishment of a viable and ongoing relationship.

A second dimension of the marital relationship is described by Turner as "person bonds." This area is divided into identity bonds and crescive, or ongoing and cumulative bonds:

First are the bonds that depend on identity rather than task aspects of interaction, that bind because they reinforce or improve the self-conceptions of the partners. Second are the bonds that develop in connection with the ongoing interaction between persons who have already been brought together because of some other bond. The first we shall designate as identity bonds. The second, because they grow with interaction, we shall call crescive bonds (pp. 64-65).

These bonds may be likened to empirical studies of dyadic relationships, and some insight into them can be gained by an understanding of the empirical literature dealing with the nature of the interactive dyad.

Marlowe and Gergen (1968) posit an interactionist model in their survey of personality and the dyadic relationship:

In this paradigm the behavior of one person is seen as impinging on a second and determining the subsequent actions of this person toward the first, and so on. From this vantage point, personality constructs might contribute to our understanding of the independent, intervening, and dependent variables operative in social processes . . . . Any dyadic schema would have to include at least three components: (1) a person who acts upon or who has 'stimulus value' for a second individual, (2) the psychological processes or structures of the individual acted upon, and (3) the overt behavior or actions of the individual toward the stimulus person (pp. 592-593).

From this paradigm, studies concerned with social dependency (Sears, Maccoby and Levin, 1957), achievement motivation (McClelland, 1961), and impression formation (Asch, 1946, 1952) hold central theoretical foci. Personality and social environment have come to be viewed as a dialectic relationship in much the same way as originally conceptualized by

Cooley in his formulation of the looking glass self and the self-fulfilling prophecy. That is, within the dyadic relationship each individual functions both as a stimulus and as a reinforcer for the other; the behavior of person A elicits a certain type of response from person B, which in turn reinforces the behavior of person A, and vice versa. A similar model of dyadic relationships is advanced by Taguiri (1968) in his discussion of the dyadic interplay in the formation of perceptions of others:

Observer and observed are simultaneously observer and observed. Their reciprocal feedback processes modify their self-presentation and, in turn, their reciprocal perceptions, in a continuous recycling but varying process during which each person uses the variations in himself and the other person as a means of validating his hypotheses about the other (p. 426).

In Turner's terms, then, it would be logical to suggest that it is the cyclical nature of the dyad, the feedback loop, which provides the vehicle by which validation and revalidation of self and alter can occur. The person bonds begin with the validation of identity, continuing within the recycling process through the establishment of crescive bonds. Without the feedback loop, such bond formation would be impossible. Yet there is little empirical evidence to suggest what variables might be more salient than others in the maintenance of the feedback loop.

This dilemma brings us full circle to the initial bonding concept posited by Turner. In order to speak of group cohesion within a marital structure, we must first determine: (1) that the individual(s) value the marital state as a socially defined entity; (2) that such a coalition would prove utilitarian in the attainment of valued goals

which could not otherwise be achieved; (3) that each individual's identity could be affirmed within the coalition; and (4) that a continuing validation can be assumed with minimal risk to the self-concept of either partner in the coalition.

Understanding group cohesion vis a vis marital satisfaction poses certain difficulties in light of the model which has been derived from the literature. The bonding phenomenon is a process rather than a static and stable event. To be measured empirically, however, it must be viewed from a somewhat static perspective. The best measure under this limitation would be one which considered and weighed as many as possible of the process elements posited above. Terman (1938) formulated a scale which encompassed a limited portion of the process. Burgess and Cottrell (1939) formulated a similar scale, which expanded the perspective and has been used rather extensively. Locke and Williamson (1958) factor analyzed this measure and five separate, but in the case of some items, interdependent factors were revealed. Locke and Wallace (1959) employed a similar marital adjustment scale and correlated it with a measure designed to predict marital success. Both reliability and validity were high for the two measures; when employed in tandem, the scales conceptually blanket the bonding process which we have argued is isomorphic to group cohesion. The question which at present remains uninvestigated is the relationship between marital adjustment and that phenomenon which Berger and Kellner (1964) have termed "validation of experience through the conversational apparatus" (p. 1-24) of the marital relationship. This constitutes a central concern of the present study.

From the afore-mentioned literature it seems intuitively reasonable to categorize the family unit in American society as a casual, self-motivated, ongoing group (Phillips, 1966). From this classification it is assumed that the family functions as an interaction system, directed toward interpersonal companionship, with a relative degree of autonomy and a set of roles and tasks which are conducive to its own perpetuation. As a small group, the family unit can be viewed in terms of variables which have proved salient to other small group settings. Indeed, the sociological literature indicates that the family, as an enduring rather than transitory group, becomes more stable as it exists over time. Divorce tends to occur in the early rather than the later years of marriage (Winch, 1971):

In 1965 the median duration of marriages terminating in divorce within the twenty-two states of the divorce registration area was 7.2 years; about one seventh of all divorces were granted to couples married less than two years, about a quarter to those married less than three, and about a third to those married less than four years (p. 603).

This temporal correlate to divorce can be conceptually likened to the notion of physical proximity, or propinquity, which can be shown to be related to group cohesion. In addition to the inverse relationship between length of marriage and divorce rate, evidence is also available which indicates that length of time which a couple knew each other prior to marriage is also inversely related to marital endurance, or group cohesion. A third correlate to marital stability, or group cohesion within the family, has been identified as interpersonal or attitudinal similarity and similarity of social background (c.f., Landis and Landis, 1971, pp. 211-214).

These basic correlates, combined with the previous notion of bonding set forth by Turner, provide the basis for positing strong conceptual similarities between that phenomenon and the small groups concept of group cohesion. We have argued that bonding involves two facets -- a bond between a member of the interacting dyad and the marital context, and a bond between the two members of the dyad. This bond, in turn, is based on initial attraction of individuals combined with ongoing and cumulative reinforcements derived by each member within the dyadic relationship. Shaw (1971) has also hinted at the conceptual similarity of these phenomena in his description of group cohesion as multifaceted:

. . . (1) attraction to the group, including resistance to leaving it, (2) morale, or at least the level of motivation evidenced by group members, and (3) coordination of efforts of group members. Most persons who use the term, however, agree that it refers to the degree to which members are motivated to remain in the group (p. 192).

As the conceptual meaning determines the operationalization of the variable, the evidence of co-relationships with other variables expands, ranging from interpersonal attraction, attitudinal and personality similarity to task accomplishment, group productivity, and communication patterns. Shaw (1971) provides a conceptual unification of the discrepant and varied evidence related to cohesion and goal achievement, noting:

. . . the cohesive group can achieve goals that it accepts more efficiently than the noncohesive group. The problem often is that groups do not set the same goals for themselves that outside agencies set for them. Hence, a cohesive group may achieve its own goals, but be relatively unproductive with regard to the goals of others. . . . (p. 201).

### Antecedents to Cohesion

Certain common traits emerge from consideration of empirical evidence regardless of the wide diversity of the experimental and investigational environments within which the studies of group cohesion were conducted. It is those common traits which we seek to establish in order that a generalized notion of necessary conditions for the development of group cohesion can be established. Propinquity has been a widely investigated variable in both laboratory and field settings. The most basic proposition which could be formulated and supported by a wide variety of research could be stated as: People who have occasion to come into physical contact with each other on a regular basis are likely to develop a basis for interpersonal attraction (c.f., Byrne and Buehler, 1955; Festinger, Schacter and Back, 1950; Gundlach, 1956; Maisonneuve, Palmade and Fourment, 1952; Sommer, 1959).

A second variable which appears to function as an antecedent condition to group cohesion is perceived similarity between persons. The proposition which could be formulated from available evidence indicates that: People who perceive another as similar to themselves will tend to develop a basis for interpersonal attraction (c.f., Byrne, 1961; Byrne, Clore and Worchel, 1966; Griffitt, 1966; Jellison and Zeisset, 1969; Novak and Lerner, 1968; Smith, Williams and Willis, 1967).

In light of the generalized empirical evidence relating antecedents to cohesion as an interpersonal attraction, it seems reasonable to state that an investigation of the immediacy - non-immediacy phenomenon, which seeks to establish contextual relevancy, must seek conditions which approximate a high degree of both propinquity and

perceived similarity between members of the group.

There is some evidence to indicate that these two preconditions are associated with groups which have been in existence for a period of time as opposed to artificially formed laboratory groups. While much of the evidence relating to group processes over time has been gathered in industrial and military settings, the general indications are that some combination of biography and interpersonal attraction tends to result in highly cohesive groups. French (1944) found that biography as a group was associated with interdependence among group members. In the absence of intragroup competition, the evidence indicates that both interpersonal attraction and task-oriented activities tend to increase (c.f., Gottheil, 1955; Mann and Mann, 1959; Stendler, Damrin and Haines, 1951; Thomas, 1957).

This author suggests that consideration of the antecedents to group cohesion leads to several important and identifiable factors. Physical proximity, interpersonal similarity as perceived by the actors, and a history of activities as a group all function as antecedents to that phenomenon which has been termed group cohesion. These are not propositions which will be empirically investigated. Rather, they form an empirically supported rationale for the present study. The assumption is that these conditions are operant in the interactive environment for the present investigation of the immediacy - non-immediacy phenomenon. These conceptually similar correlates to the indices and antecedents of group cohesion in the small groups literature are offered as evidence supporting the choice of the family unit as the contextual setting for the present research. The present study is not directly inter-

ested in verification of the correlates cited, but in establishing a basis for the development of the immediacy - non-immediacy category system within a salient interaction environment. The family offers such a setting.

Cohesion, Marital Adjustment and  
Communication in the Family Setting

The study of family communication patterns is a fertile area for the communications scholar. Turner's (1970) notion of bonding includes many of the concepts which have been posited heretofore. Turner's position conceptually suggests that the immediacy - non-immediacy notion may offer a more fruitful mode of quantifying group cohesion than those studies of family communication which seek to establish the frequency and topics discussed (Navan, 1967), or the degree of semantic agreement regarding marital roles and modes of fulfilling role requirements (Katz, 1965).

Many previous efforts to study family communication have been directed to the identification of communication-related phenomena, with an emphasis on non-normal (psychopathological) behavioral patterns. For example, Becker and McArdle (1972) compared speech patterns of families of children referred for psychological treatment to a set of control families. They found that speech patterns of normal spouses (control group) tended to have stronger non-sex-specific identifications with each other as well as stronger identification with their children than the treatment group. Dependent variables employed in this case were average length of the speech unit, frequency of pauses and median pause length in free speech samples taken from both groups. Cicchetti (1972)

found differential reactions between schizophrenic and control subjects following exposure to family interaction, which would tend to indicate that the mode of interaction and communication employed as normative in a family group is indeed determinant, in some way, of the behavior of the individual members of that family. Haring (1966) and Costello (1969) offer similar findings.

The relationship between the individual and the family group has also been investigated in terms of that individual's ties to the group. Berado (1967) found evidence which indicated that individuals manifest greater and more intense attachment to their families through their interaction and communication patterns. He determined that individuals who maintained visitation, letter writing, and verbal, face-to-face interaction modes with extended families were less willing to take jobs which required that they be geographically distant from the family of orientation.

Studies of the relationship between marital adjustment and communication are also available in the literature, indicating a relationship between the two, although not altogether clarifying that relationship. Goodman and Ofshe (1968) found that as couples become increasingly intimate their communication efficiency increases. Stimson (1966) studies verbal interaction of marital dyads using Parsons and Bales' Interaction Process Scoring procedure as his operationalization of interaction. He found little role differentiation between husbands and wives as regards their interaction during a problem solving discussion. Satisfaction during interaction, however, was correctly predicted on the basis of the wife's tolerance for disagreement as well as her demon-

strations of tension and hostility, for both husband and wife. Only with husbands was communication satisfaction related to effective marital communication. Brody (1963) found communication patterns, as measured by an objective self-report questionnaire, moderately (.38 for husbands and .47 for wives) correlated with an objective measure of marital adjustment. Higher feedback appeared to be related to marital adjustment. One-way communication was related to low adjustment. Brody concluded that not communication, per se, but the manner in which couples communicate is related to marital adjustment. Deitcher (1959) divided college-educated couples into six developmental phases, ranging from beginning families with no children to families with children entering the adult world. Differential communication patterns were manifested between stages, illustrating that subjective topics are characteristic of families with small children, and both husband and wife perceive that the wife is the spouse who talks more as the stages advance. Overall, greater marital satisfaction was related to several background factors dealing with communication phenomena. For both husbands and wives satisfaction in the marriage is linked to more free communication with the opposite-sex parent. For wives marital satisfaction is linked with a warmer atmosphere in the family of orientation. For husbands, marital satisfaction is linked to freer communication with father.

Thus there appears to be a basis for viewing communication within the husband-wife dyad, the family context, as in some way different from less intimate interpersonal communication/interaction patterns. The immediacy - non-immediacy hypothesis and category system

should be sensitive to these unique communication configurations. In this case, the communication context may well serve as a control over the communication process; hence, the central concern is not what two people talk about but how they talk about it. It is this issue of how people talk about salient topics which is the focal point for the Wiener and Mehrabian hypothesis.

Immediacy - Non-Immediacy:

Reliability and Validity of an

Ideational Construct

The Wiener and Mehrabian immediacy - non-immediacy hypothesis states, in essence, that there is an isomorphic relationship between an encoder's linguistic patterns and his or her attitudinal state and/or experiential reality. The "inference of something" (1968, p. 3) which they propose as inherent in linguistic content and patterns is further conceptualized as the "degree of separation of the speaker from the content. . . the relationship. . . and the objects" (p. 3) of the communication. Wiener and Mehrabian have offered an inferential basis for the degree of immediacy between the encoder and the various objects to which the message can be related. They suggest that this tendency to separate self, or ego, from the object of the communication, the addressee, or the topic being discussed is a form of avoidance behavior. Such behavior, they further argue, is based in a "negative affective state toward the object, the addressee, or communication" (p. 33).

Investigation of the immediacy hypothesis is grounded within the larger framework of content analysis. Many of the assumptions

which are made regarding the concept are closely paralleled in other theoretic approaches to content analysis. Holsti (1968), in his discussion of the methodological uses and misuses of content analysis, suggests that such an investigation "must be carried out on the basis of explicitly formulated rules which will enable two or more persons to obtain the same results from the same documents. . . according to systematically applied criteria. . . and having theoretical relevance" (p. 598). The broad generic methodology of content analysis must demonstrate reliability in its classificatory schema. It should offer both a description of the phenomenon under investigation and provision for a theoretic link by which that description leads to inferential insight into the phenomenon.

Holsti's cautions and guidelines will serve the present study well. His requirements, as they are stated, demand that an application of a content analysis technique be justified at two levels. First, evidence must be available which demonstrates the validity of the technique as an investigational tool for this type of communication environment. Second, the investigational parameters must be established in such a way as to lead the investigation from pure description of the communication transaction to a deeper understanding of the dynamics of a specific type of communication (e.g., dyadic, marital, or female forms). A review of the empirical investigations related to the immediacy - non-immediacy hypothesis will demonstrate that the continuum, as presently devised, has demonstrated a minimal level of both empirical and methodological reliability and validity.

The validity of the use of content analytic techniques as investigational tools for human communication is found in many areas. One of the most common uses has been to reveal source-specific personality traits. The data for such investigations has been derived from a wide variety of sources such as personal diaries and letters (Baldwin, 1942), autobiographies (White, 1947), and public addresses (Allport, 1946). A concern with the relationship between motivation, affective, and/or attitudinal states and encoding behavior has been a central concern of psycholinguistics, and this concern has spanned broad theoretic perspectives and assumptions (c.f., Osgood and Sebeok, 1969, pp. 164 ff). The immediacy - non-immediacy hypothesis is well suited for consideration within this basic framework. That is, motivational states or attitude of the encoder is related to language behavior. The one can be inferred from the other.

In experiments conducted as specific tests of the immediacy - non-immediacy hypothesis a summary of results reveals a high level of support for the general theoretic statement and underlying assumptions as they have been outlined (c.f., Mehrabian, 1964; 1966a; 1966b; Mehrabian and Wiener, 1966; Gottlieb, Wiener and Mehrabian, 1967). Mehrabian (1964) conducted an investigation of possible sex differences within the general hypothesis. In a two-by-two design, no interaction effects were found. The main effect remained the like-dislike affective state of the encoders, providing evidence that the affective condition, as initially hypothesized, appears to be a valid variable in the hypothesis. Wiener and Mehrabian (1968) summarize these results by noting:

. . .the experience factor (experimentally induced task success/failure) had by far more pronounced effect on non-immediacy. In both samples (male and female), the quality of the affective experience is the major determinant of non-immediacy and the effect is in the predicted directions, that is, communications about disliked people have more non-immediacy than communications about liked people (p. 122).

From the evidence cited, there seems a justifiable basis for employing the Wiener and Mehrabian category system as an investigational tool in the study or description of the affective relationship between an encoder and the object of the communication.

Continuing with the guidelines extracted from Holsti, it will be important to determine whether or not the immediacy - non-immediacy phenomenon has the ability to capture components of the communication which reveal the more subtle elements of an interaction environment. Under some conditions it seems reasonable to assume that an encoder might wish to "hide her true feelings" by employing some form of diplomatic language which would disguise or soften the nature of the affective state. Thus, superficial description of language behavior would most probably be insufficient as a device for capturing and describing these more subtle forms of expression. Great sensitivity of the measuring instrument is essential if these masked language behaviors are to be described and quantified in scientific terms.

In experimentally controlled conditions Mehrabian (1966a) examined the immediacy category system for such sensitivity. Subjects were told to formulate positive and negative statements regarding another person (stimulus object) whom they liked and disliked. A two-by-two-design employed the sources' affective state toward the stimulus object (positive or negative) with the evaluative statement (positive or

negative). Within these four conditions the hypothesis was again tested using both male and female subjects. Interaction effects in this case provided only partial support for the hypothesis. The immediacy category system was unable to detect original affective state for female subjects.

This sex difference which was not noted in the earlier study (Mehrabian, 1964) raises some rather confounding issues for the present study. A possible explanation might be the experimental setting. In the first experiment the affective state was manipulated within the setting. Subjects were given a series of experiences -- task success and task failure -- which provoked a highly salient affective condition. In the second condition the subjects were merely asked to write about someone who they either liked or disliked. In the first case the stimulus conditions were controlled within the experiment; in the second case the subjects were free to select from their own broad range of living experience an affective condition of their own choosing. We suggest that cultural factors may have been operant in the female selection of an affective condition rather than a failure of the immediacy categories to discriminate on the basis of sex differences.

The above evidence indicates that the immediacy - non immediacy categories, as they have been employed in past experiments, are able to discriminate between positive and negative affective conditions of the encoder. There is, in other words, an accumulation of data which is supportive of the hypothesis as it is formulated. Gottlieb, Wiener and Mehrabian (1967) offer evidence that the immediacy category system may, however, have further implications regarding the psycho-

logical nature of the encoder. They examined the relationship between discomfort-relief quotient scores -- DRQ -- (Dollard and Mowrer, 1947) and non-immediacy. The Correlation was significant ( $r = .48$ ). The authors suggest that the low level of the correlation coefficient could indicate some degree of dependence between the two measures. This, however, remains an empirical question. No tests of linearity were reported with the data.

Another element of significance in this relationship between DRQ and non-immediacy should be noted. DRQ, falling in the same general category as the type-token ratio -- TTR -- and the adjective-verb quotient -- AVQ -- is a tool for the measurement of linguistic and/or thematic aspects of non-normal (psychotic) language traits (Stone, et al., 1966). The DRQ is an outgrowth of Mednick's (1958) work on thought disorder language and is associated specifically with anxiety reduction references in speech behavior. The relationship between non-immediacy and DRQ scores standing as evidence, it would seem logical to suggest that general anxiety, rather than being randomly distributed in the non-immediacy phenomenon, may hold some systematic relationship to the distribution. Wiener and Mehrabian have suggested the following:

Clarification of the questions of which measure is the most reliable or valid for different kinds of communication situations requires further exploration. It is necessary to assess the relative validity, reliability and efficiency of each measure for different communication instances (1968, p. 135).

Although Wiener and Mehrabian suggest that non-immediacy is superior to DRQ in terms of measurement precision, the possibility that general anxiety has a role in the non-immediacy variance remains an uninvestigated phenomenon. Further evidence on the relationship between

immediacy and anxiety (Mehrabian, 1966b) continues to confound rather than clarify the issue. Using Feshbach, Stiles and Bitter's Aggression Anxiety Scale, Mehrabian failed to find significant interaction between aggression anxiety and non-immediacy. This serves to confound the question of a possible relationship in light of the DRQ evidence, and provides further rationale for an examination of a potential relationship between non-immediacy and general anxiety within the parameters of validity. This is particularly important in light of the fact that non-immediacy is conceptualized as a social interactive variable while general anxiety (e.g., Taylor, 1953) is conceptualized as an individualized personality trait.

Before specific comments can be made regarding the reliability and validity of the non-immediacy scale a brief outline of the scoring procedure is necessary. When the entire span of experimental work is surveyed three broad categories emerge with presence or absence of linguistic traits being noted within the categories and their subsets. The categories are enumerated as: spatio-temporal; denotative specificity; and action-agent-object. The communication which constitutes the data is divided into independent thought units -- usually independent clauses -- and each unit within the message is then noted as manifesting traits specific to the categorical subsets. Equal weight and unidimensionality, as well as intervality of the tallied data, are assumed and the total number of tallies for all categories for each total message/communication constitutes the non-immediacy score. Through the tallying process interjudge reliability is high and does not appear to require further refining. That is, the categories as they are presently

being used have demonstrated an adequate level of judgemental reliability regarding the initial scoring process. The assumptions which underly the derivation of the total non-immediacy score are questionable; Mehrabian, in recent correspondence with the author, has suggested that the next step in refining the scale is a scaling procedure. Under this condition, any discussion of reliability other than that dealing with the category system and initial scoring process seems a moot point.

Drawing on the preceding discussion, it is evident that the validity of non-immediacy may be contextually bound. Again, there is no direct test of validity at the present time other than the suggestion of validity implied in the use of the DRQ scores already cited. In short, validity stands as an unanswered question for the scale in its present form.

In personal correspondence with this author, Mehrabian has suggested that investigational conditions with inherently high levels of emotional involvement would be most likely to yield salient (valid) non-immediacy data. This is consistent with the overall immediacy assumption. That is, an individual's language behavior is assumed to be reflective of positive or negative prior experience with a specific object and within a specific context. The immediacy - non-immediacy continuum, under this ideational formulation, can be viewed as the product of social interaction.

### Conclusions and Expectations

The present chapter has been concerned with establishing a relationship between Turner's (1970) concept of bonding and the broad

concept within the small groups literature termed group cohesion. It has been demonstrated that the two notions are quite similar. Further, it was suggested that the dyadic relationship of husband-wife within the family setting can be legitimately viewed as a small group.

Turner's bonding framework was utilized as the basis for theoretic legitimacy of the investigation of one member of this dyadic group. It was asserted that an individual may be viewed as bonded to the context of marriage as well as to the other member of the dyad. Both cases are facilitated by initial interpersonal attraction and perpetuated by the establishment of crecive, ongoing bonds. This generalization was supported by evidence from the study of group cohesion.

Wiener and Mehrabian's (1968) immediacy - non-immediacy content analytic category system was suggested as the instrument with which to measure this bonding phenomenon. In order to employ the category system, however, steps must be taken to increase the rigor in operationalization of the categories. Such category refinement is an essential preliminary to the investigation of the structure of dimensions of contextually bound verbal behavior. Determination of the structure of a phenomenon is, in turn, a phase which must precede any investigation of an instrument's reliability.\* Guilford (1954) has stated:

Reliability is the minimum information one should have concerning a test but it is certainly not the most useful information. If it is quite high, it can sometimes give the

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\*The present study does not attempt to address the issue of reliability of the category system. At the same time, it is important to realize the ultimate role of reliability in scientific inquiry by noting the sequential stages of data analysis wich must precede such an investigation.

test user a false sense of security. For example, should one feel very comfortable about a test whose  $r_{tt}$  is .90 but whose proportion of variance in the factor one wishes to measure is only .30; . . . factor loadings should become indispensable facts to know about a test. What the scores mean and what we can predict from them is entirely restricted to relevant data (p. 388).

This mandate from Guilford suggests that factor analysis may constitute one approach to assessing the minimal reliability, the "dependability, consistency and stability" of the present measurement (Guilford, p. 342). No attempts will be made in the present study to extend reliability, per se, beyond factor analysis. Yet rigorous operationalization of the category system as well as examination of the statistical distributions of each subcategory separately are mandatory prerequisites to the factor analysis; they therefore become salient issues to this study.

Validity of the examination of the non-immediacy hypothesis being proposed can now be established at several levels. The contextual environment for the communication transaction provides a basis for subject communication of a highly salient nature. Stimulus objects -- the topical areas relevant to a marital setting -- provide the basis for discrimination at a greater level than might be possible under less salient conditions. A final basis for the contextual validity question would be a criterion measure of marital integration or stability. These considerations, in addition to the general anxiety variable posed earlier as potentially important in the general phenomenon, constitute the basis for an investigation of the validity of the non-immediacy hypothesis.

The problem of validity, then, is in part a contextual one. An argument has been posited regarding both the interactive nature of

the immediacy - non-immediacy continuum and the need for validity tests within specified contextual parameters. The husband-wife dyad has been offered as an appropriate arena for the examination of validity. This dyadic relationship is viewed as a highly salient one for the interactants and, as such, would offer a fertile field for the study of the immediacy phenomenon. Contextually, immediacy is closely paralleled by the notions of bonding and marital integration/adjustment. A measure of these concepts will be offered as validator criteria. Recent work by Locke and Wallace (1959) offers some potential for this purpose.

An additional element which casts favor on the marital (or husband-wife dyadic) setting as the context for the present investigation is the ready availability of topical issues which consistently prove to be important to husbands and wives in the course of their interaction. Landis and Landis (1968) have listed five topical areas which appear to hold general salience within the marital environment: sex relations, spending family income, religious activities, mutual friends, and social activities. Relating these topical areas to the immediacy hypothesis as well as to Turner's contention that the presence of a "bond" does not signify positive or negative affect within the bond, we can logically conclude that the issues have some degree of importance in either direction. Regardless of the directionality of affect -- positive or negative -- the salience of the topic will be assumed.

The possibility of a broad psychological relationship between immediacy - non-immediacy and general anxiety seems a persistent but untapped element in the available experimental evidence. Because of

this possibility, a second validator criterion has been suggested in a general anxiety measure (Taylor, 1953).

In an exploratory methodological study such as this, it is usually inappropriate to offer formal research hypotheses. Guilford, however, suggests that one of the steps in a factor analysis design should be the development of such hypotheses:

Develop hypotheses concerning the factors in the domain. This is probably the most important step in a factorial investigation. It is too commonly overlooked. One should attempt to decide beforehand how many factors there will be in the domain and what kind of trait each one is (p. 532).

With this suggestion, then, the following expectations are stated, formulated on the basis of this review of the literature and rationale for the study.

- I. A Communication Act consists of two basic elements: the first is inherently social, the second inherently psychological in nature.
- II. The social elements of a communication act will be manifested in those linguistic traits which denote temporal and spatial relationships between the communicator and the object of the communication.
- III. The psychological elements of the communication act will be manifested in those linguistic traits which indicate the degree of specificity in the communication or detail a relationship between the agent and object of the communication.

It is anticipated that a factor analysis technique applied to the non-immediacy scale will support the above expectations.

The following chapter will address the procedures to be utilized in the analysis of data within the framework outlined above. While the need for contextual specificity will limit the generalizability of the final results of the data analysis, it is felt that the

importance of establishing a basis for future examination of reliability and validity of measurement tools must be given primary consideration in the present study.

## CHAPTER II

### DESIGN AND METHOD OF ANALYSIS

The purpose of this chapter is to outline the procedures for gathering and analyzing the data. While no research hypotheses are operant in the procedures, certain methodological rules and criteria will be set forth for each phase of the study in order to maintain scientific rigor. Of concern will be subject selection, data administration, operationalization of the variables, and primary method of data analysis.

#### Procedure for Data Gathering

##### Subject Selection

Subjects for the study were drawn from married student housing at the University of Oklahoma. It is often convenient to contrast male and female subjects in behavioral science research. Cultural norms have established attitudinal and personality differences between the sexes as well as overt behavioral differences which all but guarantee a statistically significant difference between men and women on an almost infinite number of dependent variables (c.f., Collins and Raven, 1968, pp. 135, 175; Devos and Hippler, 1968, p. 371; Sears, 1968, pp. 395-396; Scott, 1968, p. 637; Weiss, 1968, pp. 135-139; Zigler and Child, 1968,

pp. 463-464, 478, 527, 554). The present study seeks communalities rather than differences among subjects. The essential and stated goal of the study is further refinement of the non-immediacy category system as a measuring instrument. In an initial developmental phase such as this study, homogeneity of subjects seems a desirable objective. While the establishment of homogeneity through control over subject selection places restriction on the generalizability of the instrument, such stricture seems appropriate in this initial phase of the development of the scale. For these methodological reasons, as well as the rationale stated in the previous chapter, women only were used as subjects. Accordingly, married women were randomly selected by dwelling unit from Neiman, Parkview, Kraettli and Logan apartment units. It was assumed that by utilizing random selection procedures within these population parameters other demographic variables which might prove confounding in the study, such as age, income, educational level and length of marriage, would be randomized and hence their effect, if any, controlled.

#### Administration of the Questionnaire

Subjects were contacted during the morning, afternoon, and early evening hours at their apartments. They were requested to participate in "a study of college students' wives' attitudes toward marriage." Due to the length of time required to complete the questionnaire (approximately 45 minutes in pretesting situations), the researcher left the forms and returned to regather them. This procedure holds inherent dangers with regard to contamination, partic-

ularly from collaboration between subjects and husbands and/or friends. In order to counteract this possibility, subjects were requested to fill out the forms in private. If friends or husbands were present the researcher established a time when the subject would be alone for such privacy, and returned at that time with the questionnaire. If the researcher found others present when the forms were regathered (allowing no more than the anticipated 45 minute time span required to complete the forms for a call back) the data were discarded and an alternative subject selected from the randomly selected pool of available units. It was felt that these guidelines would constitute proper safeguards against data contamination and at the same time provide an environment conducive to relative privacy and convenience for the subject. In this way we sought to enhance cooperation and honesty in subject responses.

### Variables

#### Immediacy - Non-Immediacy

As was noted in Chapter I, the present immediacy - non-immediacy category system is divided into three broad areas, with subcategories in each area. The present tabulation will be accomplished with a computer dictionary system similar to that used by the General Inquirer (Stone, et al., 1966). Operationalization requirements are such that of the original twelve subcategories only eight have been retained.\*

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\*Categories 1, 2, 3, 4, 5, 6, and 7 are found in the original formulations. Categories 8, 9, and 10 are breakdowns of a larger category system in the original formulation. The remaining categories have not been used in prior non-immediacy studies.

The other categories were found to be nonrigorous, inclusive of categories already in use, or impossible to operationalize.

Tabulation will be based on independent clauses to the stimulus objects, which can be found in Appendix A. The initial dictionary, used in the first analysis of the responses, is as follows.

1. Spatial Indicators: that, those, where, how, there, not here, a, an

Spatial indicators were viewed by Wiener and Mehrabian as being of two types. The first were adverbial clauses introduced by the word "where." The second class consisted of modifiers which served as indicators of a low degree of specificity with regard to a noun. These they listed as "that" and "those;" in addition to their original formulation, we have included "a," and "an" in this class. The terms "there," "not here," and "how" were added to the category system following inspection of preliminary data, which indicated that these terms as well served to separate the communicator from the object of the communication.

2. Temporal Indicators: were, was, had, will, shall, are \_\_\_ing, \_\_\_ed, went, did, have been, have gone, have done, during, when, while, before after, first, later

Temporal indicators are viewed as words indicative of:

(a) the relationship between the subject and the object is temporally displaced either to the past or the future, that is, the relationship is temporally not present or ongoing; (b) adverbial clauses introduced by 'when,' 'during,' or 'while' appear in the communication; (c) temporal modifiers such as 'before,' 'after,' 'at first,' 'later' appear in the communication (Wiener and Mehrabian, p. 88).

From these considerations, the present category was derived to include both past and future tense verb clauses and the other instances which Wiener and Mehrabian have noted.

3. Part of Larger Class Indicators: it, one, arm, leg, hand, head, eye (s), dress, suit, feet, face (s), stomach, tummy

Category 3 was derived from the broad area which Wiener and Mehrabian have termed "denotative specificity." They note:

It is assumed that, for the given boundary conditions, the most direct and explicit reference to the agent, action, or object is the most immediate, and that any change in the directness or explicitness, or the introduction of ambiguity or reference (through the use of an over-exclusive symbol) is an indicator of a lesser degree of immediacy (1968, p. 89).

This basic rationale can be broken down into several small categories.

"Part of a Larger Class" includes content specific terms which refer to inanimate objects or aspects of the stimulus objects. In that sense it is content specific, and any change in the stimulus objects would require a change in the content of this category for the dictionary.

4. Class Inclusion Indicators: everybody, all, they, somebody, them, women, men, husbands, wives, children, friends, ministers, priests, pastors

As with Category #3, Category #4 is content specific with regard to the stimulus objects being used in the present study. The criteria for inclusion of words in this category is stated as:

. . . if, in the verbalization, the symbol used for designating the subject refers to a class of persons which includes the subject, or the symbol used for designating the object refers to a class of objects which includes the given object (Wiener and Mehrabian, p. 90).

5. Negation Indicators: all words used in category 3 or 4 with such words as no, none, not, nothing included in the independent clause

While Wiener and Mehrabian have generally scored the negation instances with the class and part of larger class indicators, it is felt that such a scoring procedure would defeat the purpose of factor analytic

examination of the data. It has, therefore, been separated into a distinct dictionary element.

6. Possessive Pronoun

Class Indicators: its, he, she, his, her, my, mine, I, anybody

This category is the result of an attempt to separate and ferret out elements from the original Wiener and Mehrabian formulations for the purpose of factor analytic examination.

7. Passivity Indicators: have to, has to, forced, should, must  
because

Wiener and Mehrabian indicate that passivity indicators are scored "for instances in which the subject or the object or both are literally stated as being acted upon or driven to act by external forces" (1968, p. 93). This condition of being acted upon by external forces or being out of control is an indication of the communicator's separation from the subject or object of the communication.

8. Emotive Indicators: I think, I feel, I hope, it's possible,  
it seems, perhaps, just, maybe

9. Modification Indicators: some, few, many, often, seldom, very

10. Intensity Indicators: "ly" adverbs

Categories #8, #9 and #10 are extractions from the broad general class of verbalizations which Wiener and Mehrabian have termed "action-agent-object" indicators. Their original notation of unilaterality of action was eliminated due to operationalization difficulties. The passivity category was derived as originally formulated in their work. Emotive, Modification and Intensity represent extractions from the classes which they termed 'modified' and 'intensity-extensity.' The creation of three categories was necessary in order to make each of them mutually

exclusive and at the same time conform to the conceptual formulations which Wiener and Mehrabian stated.

11. Communicator-Object

Indicators of Separation: all sentences or independent clauses which begin with - the man, the woman, the husband, the wife, they

This category was added to the dictionary system in order to detect subjects who failed to make an immediate cognitive link between their own marital condition and the stimulus objects. It was derived on the basis of the instructions which are designed to elicit immediacy verbal responses. That is, subjects who fail to identify with the stimulus objects are likely to indicate this failure by immediate separation of the stimuli from their own marital affiliation.

12. Total number of words in each response

13. Total number of sentences/independent clauses in each response

Categories #12 and #13 were added to the system in order to account for verbosity of response, which is a common difficulty encountered in analysis and interpretation of open-ended response system (c.f., Kidder and Campbell, 1970; Scott, 1968).

It is recognized that the category system, which had not been pretested prior to the present study, may well be viewed as potentially inadequate. In order to counteract difficulties at this level the factor analysis of the frequencies for the categories must be preceded by a precautionary inspection of the initial frequency counts from the content analysis. That is, we suggest that following an initial content analysis with this dictionary system that the data be hand read and the categories as presently outlined be re-examined. During the post hoc

examination any changes in the dictionary, in the form of additions, deletions, or alterations in the frequency count groupings could be reprogrammed and the data recounted.

### Selection of the Stimulus Objects

Data for the category system will be taken from written responses to the stimulus objects, divided by independent clauses and fed directly into the computerized category system. The program will produce frequency counts for each category for each stimulus object.

Appendix A contains fifteen cartoon type drawings which represent various states or conditions within the marital context. The topics conform to those stated by Landis and Landis (1968) to be the most salient to the ongoing marital interaction: sex relationships, economic and monetary issues, child care, social activities and religious activities. Each topical issue is presented from a positive, negative and neutral stance. While Wiener and Mehrabian have presented evidence, as noted in Chapter I, which indicates that the affective stance of the stimulus objects is of little concern, it is felt that this issue must be considered in the present study. Indeed, the factor analysis should have similar loadings across replication conditions if the Wiener and Mehrabian category system is reflective of the subject's past experience and affective or estrangement status with regard to a particular stimulus topic.

The original pool of drawings consisted of twenty-four cartoon-type drawings compiled by a female art major at Oklahoma City University

during the Spring semester of 1973.\* The artist was given the task of composing drawings which represented positive, negative and neutral situations within each of the topical contexts. These original drawings were then subjected to a series of judgmental procedures. Initially, ten senior sociology majors, both male and female, were asked to sort the drawings into topical areas, indicating topics rather than being given a priori topics as the basis for the sorting procedure. All students were married and ranged in age from twenty to thirty-five years.

Those pictures which were unanimously judged to illustrate the five topical areas indicated by Landis and Landis to be salient to the marital context were retained for further judgment. The others were eliminated at this point. An additional pool of judges, drawn from both sociology and psychology majors at Oklahoma City University, was asked to rejudge the retained drawings, indicating both topical context and affective stance. In this case, the instructions to the judges were: "Tell me basically what this picture is about and whether you think it is positive, negative, or neutral." All pictures were again correctly judged as to topical context. Judgment of affect stance was more difficult. It was found that indication of a positive or negative stance was relatively easy for the judges. There was unanimous agreement in this regard. Indication of neutrality was more difficult.

Those drawings which failed to meet the criterion of unanimity in this regard were returned to the artist. She was asked to remove

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\*We wish to express our gratitude to Barbara Drummond for her patient and painstaking efforts in this area.

such affective indicators as eye and mouth expressions, hand and arm positions which she viewed as important in the indication of expressive feelings. The drawings were then returned to the pool. The original ten sociology majors were asked to rejudge the fifteen pictures, sorting by topics and indicating whether pictures were positive or negative in their affective stance. The judgment of neutrality was based on an even distribution (fifty percent) of those drawings thought to be neutral between the positive and negative categories. This was achieved and the pictures were accepted as valid representations of both marital context topics and the desired replication conditions.

#### Manifest Anxiety and Marital Adjustment

It was stated at the conclusion of Chapter I that two measures dealing with criterion validity would be used. The first would attempt to deal with the psychological relationship, or aspect of the immediacy - non-immediacy phenomenon, the other with the quality of the interactive context, the marital environment. Taylor's (1953) Manifest Anxiety Scale will be employed as the operationalization of the psychological aspect. The scale can be found in Appendix B. The Manifest Anxiety Scale was derived from the more general MMPI personality inventory. Taylor (1953) has reported test-retest reliability ranging from ( $r = .89$ ) for a three week interval to ( $r = .81$ ) for a seven to eighteen month interval. The scale has demonstrated its validity through discriminatory power in distinguishing normal subjects drawn randomly from a student population from non-normal psychiatric patients. The scores of the psychiatric patients were in the 98th

percentile of the distribution of normal subjects.

The measure of the quality of the marital relationship will be the Locke and Wallace (1959) Marital Adjustment Scale. Locke and Wallace report a split-half reliability coefficient with Spearman-Brown correction of .90 for the scale. Validity is based on correspondence of test scores with judgments by close friends as to the 'degree of adjustment' of couples involved. The scale has undergone a number of refinements from its original formulation by Terman (1938). Extensive validation of the first refinement was conducted by Burgess and Cottrell (1939). They found a tetrachoric correlation to an overall happiness rating of .92. Locke and Williamson (1952) factor analyzed and further refined the scale, with the unidimensionality being established. Longitudinal data would be the best indicator of validity; such data, however, is not presently available.

Operational definitions of the three variables can be stated as:

1. **Immediacy - Non-Immediacy:** the frequency of occurrence of words and phrases as indicated in the dictionary.
2. **Manifest Anxiety:** the subject's score on Taylor's Manifest Anxiety Scale.\*
3. **Marital Adjustment:** the subject's score on the Locke and Wallace marital adjustment scale.\*

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\*Taylor's Manifest Anxiety Scale can be found in Appendix B and Locke and Wallace's Marital Adjustment Scale can be found in Appendix C.

### Data Analysis

#### Factor Analysis of the Immediacy - Non-Immediacy Categories

As was noted in the previous section of this chapter, the present dictionary will produce data in the form of frequency counts for each category by each stimulus object. Each of these frequency counts must be inspected for normalcy. If the frequencies are found to fall within acceptable ranges of normal distribution, the data will be treated as interval and analyzed accordingly. Based upon inspection of density functions and measures of skewness and kurtosis, a decision will be made on the assumption of normality. Latitude for acceptability, however, was quite wide. This decision was based upon research wherein Cummings (1970) reported highly skewed distributions in his study of language behavior. It was not anticipated that the Gaussian curve would be closely approximated in the distribution of frequency counts in the present study. However, the exploratory nature of the study will allow reasonable deviation from standards of normality.

The factor analysis of the immediacy - non-immediacy category system stands as the cornerstone of the present study. The research questions posed in Chapter I require evidence of the interrelationship of all elements in the immediacy - non-immediacy phenomenon. Williams (1968) notes that factor analysis serves such a need:

. . .factor analysis provides a method for determining upon the basis of relations among a relatively large number of variables, what fewer, more basic and unique variables may underlie this larger number of variables (p. 153).

Yet the selection of factor analysis as the method of data analysis is

not completed until the method of factor analysis has been selected. Schuessler (1971) has discussed the variety of factor analytic techniques as either "rotated" or "unrotated." The principle axis solution is unrotated; the varimax is rotated. The principle axis solution is often regarded as a more objective factor analytic technique than any of the rotational schemes in that there is only one possible solution for any given correlation matrix. The rotation solutions, however, seek to approximate what Thurstone has termed "simple structure," and at the same time provide greater flexibility in terms of seeking insight into the structure of a given set of variables. In short, the varimax solution serves as "a criterion of best fit for uncorrelated factors" (Schuessler, p. 126) and provides insight into the simplest structure of a set of variables while at the same time maintaining orthogonality and thus independence of factors. Thus the varimax was selected for use in the present study.

Rotated solutions require subjective interpretation on the part of the researcher according to Williams (1968). It is imperative, then, that the researcher establish a priori standards for interpretation of factor analyzed data. One common technique for establishing elementary standards is to limit the number of factors to be extracted. While several limitation procedures are available to the researcher, it was felt that the most objective method of limitation was to establish an a priori standard for factor extraction. That is, while it is possible to establish standards which would confirm the number of factors hypothesized simply by limiting extraction to that number of factors, a more suitable and objective limitation technique is to

limit factor extraction on the basis of a mathematical criterion. Thus the program was instructed to stop extraction when the eigen values of the factors dropped below 1.00.

Criteria for the machine solution are a necessary step in the establishment of objectivity. A second issue of concern is the determination of criteria by which to judge the factor loadings. That is, some basis must be established for the determination of a "significant" factor loading. While criteria for such determination differ from research to research, the present study will employ a criteria of  $\pm .50$  or more as the necessary condition for a "significant" loading of a variable on a factor.

It is important that the issue of negative loadings not be minimized. Williams (1968) notes:

. . .variables with high negative loadings are just as pertinent to factor interpretation as are variables with high positive loadings. It is just the case that loadings having different signs on a given factor mean that the variables' scores have different directions of relationship (p. 155).

Mulaik's (1972) discussion of factor scores (p. 321-322) reinforces this decision. The present study seeks to establish a set of variables which can be viewed as additive in nature. To accept negative loadings and add them, ultimately, to positive loadings would present a logical contradiction. For example, if it were determined that the degree of group cohesion was a composite of positive leadership traits and negative authoritarian traits, it would not be logical to add together the numerical representation of high leadership traits and high authoritarian traits to establish a numerical representation of group cohesion. The same is true in the present case. To accept negative

loadings and add the scores of those loadings to the positively loaded items would, in effect, produce a non-logical factor score for the phenomenon. Thus, negatively loaded scores will not be considered in the interpretation of the factor analytic results insofar as that interpretation attempts to establish a set of additive components for further analysis.

Factor analytic results involve not only maximum scores, but also minimum scores. That is, a third interpretational issue which must be resolved on an a priori basis is the purity of the loading. In the present study a variable will be considered to be pure if it loads at  $+ .50$  or more on one factor and no more than  $+ .30$  on all other factors extracted in the solution (c.f., Burgoon, 1972; Osgood, Suci and Tannenbaum, 1957).

A fourth issue which poses a problem unique to the present study is the potential of fifteen separate factor analyses, or one for each of the stimulus objects employed in the elicitation of responses. There is no theoretic basis for combining these stimulus objects into one grand factor analytic solution. For this reason, criteria for comparison of the fifteen potential analyses must also be established on an a priori basis. The analysis and interpretation of the separate factor analyses will begin by viewing each stimulus object as a separate and distinct set of data. This perspective will serve as a preliminary step. The initial inspection of the data has as the central goal the determination of: (a) pure loadings of the variables on the individual stimuli and (b) regularities or consistencies in the behavior of the variables across stimuli.

Following the survey inspection of the factor analyses, the variables will be judged as consistent or inconsistent in terms of the frequency of pure loadings. That is, the first question to be addressed is whether or not a given variable consistently loads within the purity criterion in X number of the fifteen cases. This issue is addressed by Siegel (1956) in a discussion of probability:

Although the value of P may vary from population to population, it is fixed for any one population. However. . .we cannot expect that a random sample of observations from that population will contain exactly the proportion P of cases in one class [e.g., "pure" loadings] and proportion Q of cases in the other [e.g., non-pure loadings]. Random effects of sampling will usually prevent the sample from exactly duplicating the population values of P and Q (p. 36).

Thus it cannot be expected that if a variable is pure in any single instance that condition is an effect of either random sampling or of systematic behavior of the variable. Some mathematical basis must be established for determining whether the behavior of variable X is systematic or a function of random behavior. Siegel suggests the use of the binomial test for establishing the probability of a given set of observations occurring within a defined population of observations. If it can be assumed that the probability of a pure loading for a given variable in a given stimulus condition is .50, the calculation for eight or more pure loading conditions out of a total of fifteen observations reveals that the probability of this occurrence by chance is .20. This probability level will serve as the criteria for the selection of variables as consistent or inconsistent. In short, a variable will be judged first for purity and then for consistency.

It is not sufficient that the variables alone be examined for consistency. That is, the rationale for the study has argued that language behavior is context bound and must be examined accordingly. Thus the stimuli, too, must be subjected to inspection for consistency. Following the reduction of the variables to a set of consistently pure loadings, those variables will be examined in terms of the stimuli. A given stimulus must meet the same criteria for consistency which were established for the variables. Siegel's binomial test and the logic behind it will serve this purpose. In this case the question being addressed is whether or not a given stimulus has elicited a greater than chance proportion of pure loadings of those variables already judged to be consistently pure. As was the case with the judgement of consistency for the variables, the probability level for judgement of consistency of stimuli will be .20. In this way the data will be regularized, with much of the subjectivity of interpretation of factor analytic solutions eliminated.

Once the variables and stimuli have been determined to be consistent in their behavior the data will be examined for dimensions. The presence of a mathematical factor does not guarantee a bona fide dimension. The present study will employ a criteria of five variable loadings on a factor before that factor will be considered a dimension. Only those variables which have been determined to be consistently pure in their behavior across stimuli will be considered in this examination.

#### Criterion Check

As was indicated in Chapter I, each of the dimensions, once

established, will be checked against two independent measures. If the theoretic rationale which was explicated is a valid one, then one dimension should have a significant relationship with marital adjustment while the other dimension should demonstrate a significant relationship with manifest anxiety. The appropriate mode of verification of this portion of the research question is through the explanation of variance of the dimensions derived through criterion measure. The criterion check will proceed in the following way:

1. Immediacy - non-immediacy scores will be determined through the derivation of dimensions as previously specified. Once the existence of a dimension has been established, the raw scores within that dimension (the frequency scores of the pure loadings) will be summed, constituting a dimension score for each subject. This procedure will be repeated for each stimulus.
2. Each dimension, as previously defined, will then undergo a partial correlation with the two independent variables. That is, while a number of combinations are possible in the conduct of a partial correlation, only two will be used:

$$r_{12.3}$$

$$r_{13.2}$$

when 1 = the immediacy - non-immediacy dimension score, 2 = manifest anxiety score and 3 = marital adjustment score for the subject. The purpose of this calculation is to determine the amount of co-variance between the immediacy - non-immediacy

dimension and either of the other two variables, holding the third variable constant.\*

3. McNemar (1969) suggests a second correlation procedure to be used when we seek "to have the correlation between variables  $X_1$  and  $X_2$  with the influence of  $X_3$  removed from  $X_2$  only" (p. 185). In order to sort out the covariation of the immediacy - non-immediacy dimension with both manifest anxiety and marital adjustment, it is necessary to perform certain part-order correlations. Thus, we will look at the correlation between immediacy - non-immediacy and manifest anxiety with any variation in manifest anxiety due to marital adjustment removed. Conversely, we will look at the correlation between immediacy - non-immediacy and marital adjustment with any variation in marital adjustment due to manifest anxiety removed. This part-order procedure will be particularly valuable if there is a significant correlation -- but not perfect or near perfect correlation -- between manifest anxiety and marital adjustment.

These alternate correlational techniques will serve as the basis for establishing a social and/or psychological identifying label for the dimensions extracted from the factor analyses of the immediacy -

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\*Ordinarily the multiple correlation would be calculated prior to the partial and/or part-order correlations. The research questions in the present study do not call for the multiple correlation and for that reason it has been deleted from primary data analysis plans.

non-immediacy data. The research questions are posed around the issue of the structure of the phenomenon and the identification of that structure in terms of external variables. As such, the factor analyses serve as the principle method of analysis in the study.

Scheussler (1971) speaks to the issue of establishing a basis for measurement within the framework of factor analysis, as opposed to establishing a basis for prediction, which is generally within the scope of regression studies:

Ordinarily, we factor a set of correlations to test the general idea that many different scales are measuring a few underlying characteristics. Factor analysis finds its greatest utility in the realm of measurement and is usually not employed at all in causal analysis. . . In factor analysis, unlike regression analysis, we do not designate some variables as dependent and others as independent, with the implication that dependent variables are an effect of independent variables. Rather, we treat all variables as dependent in the special sense that all stand in relation of asymmetrical dependence to the hypothetical common factors (p. 87).

Thus the designation of dependent and independent variables in the present study seems most inappropriate in light of the stance of the research questions posed in the previous chapter.

A final issue to be resolved in the data analysis is the determination of a significance level for the correlation procedures. While correlational significance is in part a function of N size, it is felt that a more appropriate approach to the use of correlation techniques in the present study is the establishment of an a priori level of acceptability in terms of magnitude of the relationship indicated by the correlation rather than by the statistical significance of the computation. Guilford (1956) has provided a rough guide to the judgement of magnitude which provides the rationale for the present study. He

suggests that when  $r$  is less than .20 the relationship indicated is slight to negligible; when  $r$  ranges from .20 to .40 the relationship is small but apparent; when  $r$  ranges from .40 to .70 the relationship is moderate; when  $r$  ranges from .70 to .90 the relationship is marked and substantial; when  $r$  is greater than .90 the relationship is high and dependable. The purpose of the present study remains exploration of a phenomenon. Setting the arbitrary significance level, in terms of magnitude, at a high level raises the possibility of rejecting a relationship which may exist but not be strongly indicated due to any number of methodological problems. At the same time, establishing a level which is quite low raises the possibility of identifying a dimension or factor which contains a large amount of error variance. Thus, relying on Guilford's guidelines, a correlation coefficient which is equal to or surpasses .50 will be viewed as indicative of sufficient magnitude to minimize within limits the error variance ( $1 - r^2$ ) inherent in any accumulation of factor loadings that are not perfectly correlated.

#### Contingency Analysis Plans

Far too often a well formulated research plan is thwarted in the early stages because data elicited from respondents fails to conform to theoretic expectations of the researcher. At the same time no contingency plan is available for data analysis. This is a common hazard in behavioral science research, and increases in probability as the researcher's control of the subjects, setting, and extraneous

variables decreases. Thus the hazard is particularly great in an exploratory study such as this one.

Rigor in the research design can establish some of the safeguards necessary for seeing a study through to fruition. However, additional analysis procedures should be stated within the framework of the initial design, in the form of contingency plans. Such plans serve to guide data analysis should the data fail to conform to theoretic expectations. The following contingency plan has been formulated in order to cope with possible deviations of the data from the expectations as stated earlier in the rationale for the study.

- (1) The research expectations as stated call for a two-dimension structure of the immediacy - non-immediacy phenomenon. The factor analyses could yield a structure of only one dimension, or a structure of more than two dimensions after inspection procedures as earlier outlined have been completed. Should this occur the question of identification of the structure remains unanswered and the correlation procedures will be conducted in accord with earlier procedures. If no consistent loadings can be determined or no legitimate dimensions derived through the factor analyses, data analysis will terminate at this point.

- (2) The specific loadings of the immediacy - non-immediacy variables could deviate from the research expectations as stated in Chapter I. That is, the configuration of variables

which form the dimensions of the immediacy - non-immediacy phenomenon may not conform to research expectations II and III. Should this occur the problem of identification of structure in terms of manifest anxiety and/or marital adjustment remains unanswered, and the correlational procedures will be conducted as previously outlined.

- (3) The partial and part-order correlations speak specifically to the stated research questions. The multiple correlation procedure, while not having a direct bearing on the research questions, will be reserved as an alternative explanatory device. That is, the multiple correlation will be used only if the partial or part-order correlations fail to reach the established significance level of .70.

Within the framework of analysis as stated, then, these contingencies will stand as the rationale for deviations from the basic plan for data analysis. As such, these deviations need not be justified as post hoc procedures. Any other deviations in data analysis will indeed stand as post hoc procedures, and as such will be justified within the framework of data analysis and the reports of those analyses.

#### Summary and Conclusions

The present chapter has explicated the procedures and controls to be exercised in data gathering and subject selection. The

variables have been operationalized and the method of data analysis and interpretation has been established. Alternative analysis procedures have been outlined. Chapter III will present the data analysis results and provide a discussion of those results as they relate to the research questions.

### CHAPTER III

#### DATA ANALYSIS AND RESULTS

The present chapter details the method of analysis and the results of those analyses as they are relevant to the stated research expectations. A demographic description of the subjects employed in the study and a description of the sampling procedure initiate the discussion. This is followed by a summary of the statistical analysis procedures, including frequency data derived from the verbal responses, the factor analyses of the frequency data, and interpretations of the factor analyses. The chapter will conclude with a statement of questions which remain unanswered by the present analytic procedures.

#### The Subjects

Married women (N = 91) from four University of Oklahoma married student housing centers were randomly sampled to obtain the data. Under survey sampling conditions many of the amenities of the experimental design are not available to the researcher, and adjustments of method and procedure must be available to the researcher while the survey is in process. Such was the case with the present study. No allowance

was made during the conceptualization of the study or during the initial random selection of housing units for the many foreign students living in married student housing. Those women among this group who are not students themselves generally speak little or no English and rely primarily upon their husbands in their communications with the world at large. These women were discovered only at the request stage of the survey and had to be eliminated during the sampling procedure. No figures had been made available from the housing office regarding either the number of foreign students in married student housing or the location of their dwelling units. Thus when the problem presented itself the sample was redrawn, increasing the potential pool of units from one hundred fifty to three hundred. In addition, summer vacancy rates for married student housing were approximately thirty percent. While the housing office was able to provide occupancy statistics in general, they were unwilling to provide a list of units presently being occupied. The survey workers were faced with elimination procedures in the field, both in terms of vacancies and foreign students. No foreign women were included in the sample and callbacks were limited to two times.

Subjects were selected by randomly drawing apartment units from four housing centers which are reserved for married students -- Parkview, Kraettli, Neiman and Logan. The University of Oklahoma married student housing has available nine hundred fifty-eight units in total, according to the housing office. Of these, summer occupancy during the sampling period was approximately sixty percent of total capacity, with the exception of South Base apartments. These units were excluded from the sampling procedure as they were being phased out of use by the University

and during the sampling period had only six families in residence out of a total of one hundred eighty available units. The following table describes the sampling by listing the total available units for each complex, the number of units occupied during the sampling period, and the total number of subjects sampled for that unit.

| TABLE 1: Subjects Selected by Available Units |                |                   |                     |    |
|-----------------------------------------------|----------------|-------------------|---------------------|----|
| Complex                                       | Total<br>Units | Units<br>Occupied | Subjects<br>Sampled |    |
|                                               |                |                   | %                   | N  |
| Parkview                                      | 243            | 171               | 38                  | 35 |
| Old Kraettli                                  | 104            | 85                | 19                  | 18 |
| New Kraettli                                  | 311            | 265               | 38                  | 34 |
| Neiman                                        | 96             | 63                | 3                   | 3  |
| Logan                                         | 24             | 24                | 2                   | 1  |

The total of ninety-one subjects who were selected were contacted by interviewers on a random basis and asked to participate in a survey of married women's attitudes toward marriage.

The women contacted were, for the most part, quite cooperative. This had been anticipated. Many of the subjects were students themselves; and if not, their husbands were students and they were well aware of the problems and difficulties which students face in completing project requirements. Three days were spent in sampling. Potential subjects contacted on the first day seemed more cooperative than those contacted during the second day. Women contacted on the third day were already familiar with the survey and the refusals increased markedly. That is, out of forty-five women contacted on the first day there were two refusals. On the second day of interviewing

there were six refusals out of thirty-seven women contacted. On the third day thirty-eight women were contacted, with twenty-one refusals. At this point, attempts to obtain additional subjects were discontinued. It was felt that, while a total sample of one hundred subjects was desirable, the data faced reputational contamination if the survey process was continued. In short, a highly closed community such as married student housing on a university campus has a rapid rate of diffusion of new information, and the apartment units had become saturated.

This ascending refusal rate must be coped with in terms of the generalizability of the study. That is, there may well be a relationship between a woman's attitude toward her marriage and her willingness to comment on marriage via a questionnaire. Whether this introduces a positive or negative bias to the immediacy - non-immediacy phenomenon cannot be determined within the scope of the present study. Special caution is warranted in generalizing the results of the analysis. Future research must attempt to cope with this problem of contamination, which is inherent in all survey research.

A final difficulty encountered during the survey was the length of time required to complete the questionnaire. While forty-five minutes had been adequate during the pretesting phase and designing of the survey, this was not the case in the actual survey. In some cases the time extended to several hours, as the questionnaire was forced to adapt to schedules of classes and work obligations. That is, when the time span seemed a reasonable one, or if a subject requested more time to complete the questionnaire, this was allowed. The latitude for subject possession of the questionnaire, then ranged from

thirty minutes to four hours. While in some cases this time did exceed the limits established in Chapter II, the necessity for adaptability under survey conditions provided for inclusion of those questionnaires in the data analysis.

In each case where possession exceeded the established limit of forty-five minutes the decision to accept the questionnaire was based on the apparent need on the part of the subject for greater time to complete the forms as well as a judgement of continued privacy for the subject on the part of the surveyor.

It is not felt that the reliability of the data has been greatly affected by the extensive possession time of the questionnaire by some of the subjects. This, again, is one of the handicaps of survey research. The lack of controlled conditions, in and of itself, lowers reliability. In seeking to gain an advantage in one area the researcher must frequently sacrifice advantages which might be gained through use of an alternate research technique. In this case the reliability of the study has been lowered somewhat, due to the relative lack of external controls, in an attempt to raise the level of validity, in terms of seeking a broad subject population through survey techniques. The author accepts the limitations and problems inherent in this trade-off.

A basic description of the subjects in regard to their age-range, educational level, years married, number of children and student versus non-student status was gathered in the questionnaire. Although it was not employed in the data analysis, a summary of these demographic descriptions follows and is detailed in Appendix D. The data

are included in the report in order that any reader interested in extending the following results or extending those results to a larger population will have readily available the statistics to do so.

The median age of the subjects was 24.48 years. Their median educational level was 14.86 years. The median number of years married was 2.4 years. Their families were young and marked by relatively small size. Only fifty-six percent of the women sampled were students, while ninety-five percent of their husbands held student status. Median annual income of the subjects for the previous year was \$3,935.

#### The Content Analytic Procedure

The data were gathered in the form of written responses to each of the fifteen drawings in Appendix A. The written responses were then divided into independent clauses prior to the keypunching of the data. An independent clause was operationally defined as any statement which contained a subject and a verb, along with any clauses or modifiers which might accompany that subject and verb. Dependent clauses were viewed as connected to that independent clause to which they were conceptually related, and were keypunched accordingly.

A content analysis of frequency of occurrence of the specified operationalizations was conducted with a computerized procedure. The program for that procedure can be found in Appendix E.\* The pro-

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\*Gratitude is extended to Mr. Greg Sather of the University of Oklahoma Research Institute for his efforts in writing the program. The program is on file at the Speech Communication Research Laboratory University of Oklahoma, in card form with accompanying instructions for data and input deck preparation.

gram itself has proved quite useful for the limited compilation procedure which generates data from the initial written response sets. The operation of the program can be summarized as follows.

1. It tags and categorizes specified words and two word phrases. Additionally, the program can also read suffixes and categories from specified suffixes.
2. It constructs histograms and provides basic descriptive statistics of mean, variance, standard deviation, median, skewness and kurtosis for each content analytic category.
3. It punches frequency data on to a separate deck, which then facilitates further analysis for appropriate and/or specified categories.

The procedure is able to scan and categorize over seven hundred words per minute. The efficiency of initial tagging, when categories are properly operationalized, is quite apparent. In addition, the program permits independent construction of a dictionary system, which permits rapid reanalysis of the data and/or revision of the dictionary.

The procedure for analysis of the present set of data was as follows. The original categories as derived from Wiener and Mehra-bian's (1968) summary of their research with the immediacy - non-immediacy phenomenon were placed in dictionary form. This original data was then 'read' and the responses appropriately tagged. Following this initial scan the data were read by the author to determine whether the procedure was operant and to determine what additions and deletions of the dictionary were appropriate. Alterations of the dictionary were then made, and the data reanalyzed. The following analyses are based

on the second scan procedure. The final dictionary used for the second analysis can be found in Appendix F.

### The Factor Analyses

The factor analyses proceeded by stimulus object. That is, because there was no theoretic justification for the combining of the fifteen stimuli employed to elicit subjects' responses, each stimulus was subjected to a separate factor analysis of the frequency data. The descriptive statistics for each stimulus and the immediacy - non-immediacy categories in that stimulus are found in Appendix G. Tables 2-16, on the following pages, report the results of the varimax rotations for each stimulus.

Interpretation of the factor analyses will involve three separate phases. First, the variables will be examined to determine consistency of purity loadings across stimuli, without regard for the configurations or groupings of the variables on dimensions.\* Second, attention will be directed to the configurations of loadings; the purpose of this portion of the examination will be to determine consistency of the configurations. The third phase of the examination will involve comparison of the topical and replication conditions of the stimulus objects. This comparison will also seek to establish consistency of the configurations across topical areas and replication conditions.

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\*Employing the formula suggested by Siegel (p. 37), setting  $p = .20$ , and solving for  $x$  with  $N = 15$ ,  $x = 8$ . Eight or more pure loadings will be the level at which consistency is deemed to have been demonstrated.

Table 2: Factor Analysis of Stimulus One

| Factors      | I      | II     | III    | IV     | $h^2_{**}$ |
|--------------|--------|--------|--------|--------|------------|
| 1            | .4381  | -.2546 | -.4333 | .1362  | .4630      |
| 2            | *.8002 | -.0933 | -.0195 | -.1312 | .6665      |
| 3            | .0242  | .1018  | +.8640 | -.0363 | .7587      |
| 4            | *.5144 | -.2633 | .2643  | .0103  | .4008      |
| 6            | *.8170 | .1040  | -.1655 | .0837  | .7128      |
| 7            | .2475  | .0306  | -.3741 | *.5044 | .4566      |
| 8            | .1755  | *.7510 | .0154  | -.0431 | .5976      |
| 9            | .4902  | .2910  | .2143  | -.0056 | .3404      |
| 10           | .0072  | .0455  | .0927  | *.9082 | .8356      |
| 11           | -.0613 | *.6334 | -.0758 | .1039  | .4215      |
| 12           | *.8817 | .1347  | -.2507 | .2377  | .9148      |
| 13           | *.7537 | .0847  | -.1739 | .2656  | .6761      |
| Eigen values | 3.7689 | 1.3192 | 1.1337 | 1.0229 |            |

\* indicates variable loading pure on the designated dimension.

\*\* $h^2$  in all tables reporting factor analytic results represent communality.

Table 3: Factor Analysis of Stimulus Two

| Factors      | I      | II     | III    | IV     | $h^2$ |
|--------------|--------|--------|--------|--------|-------|
| 1            | *.5541 | .2974  | .0608  | .0329  | .4018 |
| 2            | *.8126 | .0783  | -.0146 | .0993  | .6765 |
| 3            | .2744  | -.3011 | -.6236 | .1589  | .5800 |
| 4            | .1117  | *.8853 | -.0385 | .0777  | .8101 |
| 6            | .7421  | -.1585 | -.3522 | .1586  | .7249 |
| 7            | .1054  | .2536  | .2415  | *.6720 | .5853 |
| 8            | .1298  | -.1203 | .0894  | *.8379 | .7415 |
| 9            | .4890  | -.0406 | -.2173 | -.0635 | .2920 |
| 10           | .1433  | .3724  | -.7283 | .0925  | .6982 |
| 11           | .1518  | .0586  | -.7736 | -.0003 | .6249 |
| 12           | .7576  | .1622  | -.4658 | .2864  | .8992 |
| 13           | .7377  | .0855  | -.3183 | .3306  | .7621 |
| Eigen Values | 4.4412 | 1.1836 | 1.1662 | 1.0060 |       |

Table 4: Factor Analysis of Stimulus Three

| Factors      | I      | II     | III    | h <sup>2</sup> |
|--------------|--------|--------|--------|----------------|
| 1            | .2999  | *.7036 | -.0622 | .5921          |
| 2            | -.1119 | *.8384 | .0413  | .7171          |
| 3            | *.6287 | .0946  | -.0895 | .4122          |
| 4            | -.1094 | .2356  | *.6145 | .4451          |
| 6            | *.8097 | .1552  | .0322  | .6808          |
| 7            | .4963  | -.1403 | .4727  | .4894          |
| 8            | .0788  | -.0742 | *.7039 | .5072          |
| 9            | .3650  | .3270  | .1240  | .2555          |
| 10           | *.5718 | -.0445 | -.0046 | .3290          |
| 11           | .4563  | .4040  | .0712  | .3765          |
| 12           | .7434  | .5474  | .2869  | .9342          |
| 13           | *.6375 | .3587  | .4149  | .7072          |
| Eigen Values | 4.0119 | 1.3075 | 1.1280 |                |

Table 5: Factor Analysis of Stimulus Four

| Factors      | I      | II     | III    | IV     | h2    |
|--------------|--------|--------|--------|--------|-------|
| 1            | *.7156 | .2504  | -.0255 | -.0805 | .5819 |
| 2            | *.6173 | .1112  | -.1227 | -.5041 | .6627 |
| 3            | -.0163 | .0749  | .1812  | -.6194 | .4224 |
| 4            | .0641  | .0091  | *.8141 | -.0126 | .6671 |
| 6            | .2272  | -.0947 | -.1088 | -.7779 | .6776 |
| 7            | .0911  | .2708  | .4718  | -.4652 | .5207 |
| 8            | .0321  | *.7932 | .1806  | -.1576 | .6877 |
| 9            | *.7466 | -.1031 | .2895  | -.0223 | .6523 |
| 10           | .0744  | .3922  | -.0489 | -.6237 | .5507 |
| 11           | .1818  | *.7651 | -.0878 | -.0485 |       |
| 12           | *.6786 | .2626  | .0708  | -.5957 | .8892 |
| 13           | .3458  | .1485  | .3230  | -.5997 | .6056 |
| Eigen Values | 4.1930 | 1.2373 | 1.0632 | 1.0531 |       |

Table 6: Factor Analysis of Stimulus Five

| Factors      | I      | II     | III    | IV     | h <sup>2</sup> |
|--------------|--------|--------|--------|--------|----------------|
| 1            | .3934  | -.2308 | -.3694 | -.3774 | .4869          |
| 2            | *.6709 | .2304  | .0928  | .0629  | .5157          |
| 3            | *.5005 | -.0858 | .1051  | -.3854 | .4174          |
| 4            | .0396  | *.8916 | -.0046 | -.1000 | .8065          |
| 6            | *.8091 | .0366  | -.3088 | .1532  | .7749          |
| 7            | *.6698 | -.1746 | .0221  | -.0836 | .4866          |
| 8            | .1205  | -.1672 | .1019  | *.8567 | .7868          |
| 9            | -.0416 | .1956  | -.8218 | -.1134 | .7282          |
| 10           | .4233  | .2500  | -.3796 | .1748  | .4164          |
| 11           | .2267  | -.2509 | -.6849 | -.0172 | .5838          |
| 12           | *.8466 | .0830  | -.4139 | -.0266 | .8956          |
| 13           | *.7682 | -.0780 | -.3848 | -.0948 | .7533          |
| Eigen Values | 4.1506 | 1.1754 | 1.3074 | 1.0210 |                |

Table 7: Factor Analysis of Stimulus Six

| Factors      | I      | II     | III    | h <sup>2</sup> |
|--------------|--------|--------|--------|----------------|
| 1            | .2946  | .1660  | .6525  | .5156          |
| 2            | *.6945 | .1032  | .2086  | .5364          |
| 3            | .1375  | -.0810 | .7605  | .6037          |
| 4            | .2835  | .1625  | -.1582 | .1318          |
| 6            | *.7983 | .0811  | .2197  | .6921          |
| 7            | *.6793 | .2766  | -.1147 | .5511          |
| 8            | .1475  | *.8232 | -.0222 | .6984          |
| 9            | .4193  | .5481  | .1931  | .5135          |
| 10           | .2339  | *.6405 | .0080  | .4650          |
| 11           | -.0893 | .5478  | .4857  | .5439          |
| 12           | .7687  | .3080  | .4974  | .9332          |
| 13           | .8007  | .1514  | .3544  | .7897          |
| Eigen Values | 4.5769 | 1.2882 | 1.2095 |                |

Table 8: Factor Analysis of Stimulus Seven

| Factors      | I      | II     | III    | $h^2$ |
|--------------|--------|--------|--------|-------|
| 1            | .3794  | .4570  | .2118  | .3977 |
| 2            | .5434  | .3014  | .2027  | .4327 |
| 3            | .4859  | .1656  | .0426  | .2653 |
| 4            | .2275  | .5996  | .4377  | .6028 |
| 6            | *.7513 | .1705  | -.1072 | .6049 |
| 7            | .0263  | *.8480 | .0204  | .7202 |
| 8            | .0838  | -.0118 | .9123  | .8394 |
| 9            | .2258  | *.6866 | -.1763 | .5535 |
| 10           | .3917  | .1094  | .0734  | .1708 |
| 11           | *.5727 | -.0745 | .0810  | .3400 |
| 12           | .8432  | .3639  | .0970  | .8528 |
| 13           | *.8464 | .1390  | .0711  | .7386 |
| Eigen Values | 4.1960 | 1.2620 | 1.0609 |       |

Table 9: Factor Analysis of Stimulus Eight

| Factors      | I      | II     | III    | IV     | h <sup>2</sup> |
|--------------|--------|--------|--------|--------|----------------|
| 1            | *.6057 | -.0698 | .1013  | -.5251 | .6578          |
| 2            | .2447  | -.7300 | .1679  | -.0510 | .6236          |
| 3            | .0091  | -.7235 | -.0829 | -.1181 | .5444          |
| 4            | .2330  | -.1384 | .5804  | .4909  | .6513          |
| 6            | *.5043 | -.4857 | -.0779 | -.3545 | .6220          |
| 7            | .0617  | -.2081 | .1081  | -.7648 | .6438          |
| 8            | .2448  | -.3009 | -.6407 | .0744  | .5665          |
| 9            | *.6675 | -.1145 | .0373  | .2019  | .5008          |
| 10           | .0981  | -.1252 | *.6447 | -.1107 | .4531          |
| 11           | .6888  | .3463  | .3217  | -.0622 | .7018          |
| 12           | *.8699 | -.3125 | .0638  | -.2116 | .9031          |
| 13           | *.8509 | -.2131 | -.0733 | -.0690 | .7796          |
| Eigen Values | 3.8621 | 1.5947 | 1.1368 | 1.0542 |                |

Table 10: Factor Analysis of Stimulus Nine

| Factors      | I      | II     | III    | IV     | $h^2$ |
|--------------|--------|--------|--------|--------|-------|
| 1            | .1415  | .1665  | .3710  | -.5738 | .5145 |
| 2            | .4011  | -.1563 | .5564  | -.0858 | .5023 |
| 3            | .0251  | .0408  | .7547  | -.0975 | .5813 |
| 4            | .1572  | .4761  | .4441  | -.2776 | .5257 |
| 6            | *.8634 | .1157  | -.1150 | .0564  | .7752 |
| 7            | .4567  | -.0930 | .3294  | -.2189 | .3736 |
| 8            | .2805  | *.8256 | -.0539 | .0932  | .7718 |
| 9            | .1257  | .1286  | .5286  | .5573  | .6223 |
| 10           | -.0561 | *.8085 | .0315  | -.1589 | .6830 |
| 11           | .2305  | .0978  | .0864  | -.6745 | .5251 |
| 12           | .7752  | .2517  | .4494  | -.2377 | .8922 |
| 13           | *.7309 | .1902  | .2173  | -.2352 | .6730 |
| Eigen Values | 3.7875 | 1.4578 | 1.1019 | 1.0932 |       |

Table 11: Factor Analysis of Stimulus Ten

| Factors      | I      | II     | III    | IV     | V      | $h^2$ |
|--------------|--------|--------|--------|--------|--------|-------|
| 1            | .0065  | -.0044 | -.0696 | -.1182 | .8572  | .7536 |
| 2            | .0432  | -.1589 | .0870  | -.8356 | .1012  | .7431 |
| 3            | *.7181 | -.1898 | .1352  | -.0217 | .2501  | .6329 |
| 4            | .1858  | .0923  | .7668  | -.2119 | -.2060 | .7183 |
| 6            | .4578  | .2546  | .0361  | -.6157 | .2457  | .7152 |
| 7            | *.7261 | .2120  | .1656  | .0194  | -.0271 | .6007 |
| 8            | -.0460 | -.0326 | .8348  | .0686  | .1724  | .7345 |
| 9            | .2569  | -.6567 | .1137  | .1914  | .4164  | .7202 |
| 10           | *.7579 | -.1186 | -.1711 | -.1759 | -.0748 | .6543 |
| 11           | .1059  | *.8030 | .1051  | .1955  | .1431  | .7258 |
| 12           | .5892  | .0225  | .2267  | -.4290 | .5744  | .9130 |
| 13           | .5821  | -.0451 | .1770  | -.3332 | .4821  | .7156 |
| Eigen Values | 3.8668 | 1.4513 | 1.2325 | 1.0019 | 1.0753 |       |

Table 12: Factor Analysis of Stimulus Eleven

| <i>Factors</i> | I      | II     | III    | <i>h<sup>2</sup></i> |
|----------------|--------|--------|--------|----------------------|
| 1              | *.6880 | .1139  | .1232  | .5016                |
| 2              | .5381  | -.1590 | .3426  | .4322                |
| 3              | .3055  | -.4803 | .4556  | .5316                |
| 4              | .0415  | .2233  | .7016  | .5438                |
| 6              | .7949  | -.0039 | .3010  | .7225                |
| 7              | .1260  | -.0917 | *.6339 | .4260                |
| 8              | .0460  | .7675  | .2145  | .6372                |
| 9              | *.6399 | .1261  | -.1831 | .4589                |
| 10             | .4354  | *.5519 | -.0022 | .4941                |
| 11             | .3079  | .2693  | .4405  | .3614                |
| 12             | .8195  | .0959  | .4714  | .9030                |
| 13             | .6928  | .1528  | .4733  | .7273                |
| Eigen Values   | 4.4179 | 1.2833 | 1.0393 |                      |

Table 13: Factor Analysis of Stimulus Twelve

| Factors      | I      | II     | III    | IV     | $h^2$ |
|--------------|--------|--------|--------|--------|-------|
| 1            | *.6227 | -.0838 | .0226  | .1088  | .4071 |
| 2            | .6738  | .0814  | .0061  | .0011  | .4607 |
| 3            | .2173  | .0124  | *.7397 | -.3942 | .7499 |
| 4            | -.0641 | .0522  | *.8630 | .2315  | .8049 |
| 6            | *.6622 | -.2245 | -.1126 | -.3319 | .6118 |
| 7            | .1450  | -.6093 | -.0457 | -.2093 | .4382 |
| 8            | .5930  | .4114  | .0637  | .0652  | .5292 |
| 9            | .3807  | -.3938 | -.0325 | -.0656 | .3054 |
| 10           | -.0041 | -.0623 | .0169  | -.9188 | .8484 |
| 11           | -.0411 | -.7951 | -.0009 | .1395  | .6533 |
| 12           | *.7802 | -.4171 | .2252  | -.2151 | .8796 |
| 13           | *.6333 | -.3990 | .2848  | -.1564 | .6659 |
| Eigen Values | 3.4741 | 1.5177 | 1.2750 | 1.0377 |       |

Table 14: Factor Analysis of Stimulus Thirteen

| Factors      | I      | II     | III    | h <sup>2</sup> |
|--------------|--------|--------|--------|----------------|
| 1            | .2901  | -.0905 | .6716  | .5435          |
| 2            | *.6112 | .0984  | .2714  | .4569          |
| 3            | .2260  | .1315  | .6226  | .4559          |
| 4            | .0694  | *.7586 | .0982  | .5883          |
| 6            | *.6504 | .0880  | .0605  | .4344          |
| 7            | .1535  | *.5911 | -.0101 | .3730          |
| 8            | -.0846 | .0080  | .8208  | .6809          |
| 9            | *.7096 | .0006  | -.2193 | .5515          |
| 10           | *.5668 | -.1376 | .1881  | .3756          |
| 11           | -.0692 | *.7317 | .0181  | .5405          |
| 12           | .7567  | .2805  | .4948  | .8962          |
| 13           | .6587  | .2868  | .3885  | .6670          |
| Eigen Values | 3.7578 | 1.4847 | 1.3214 |                |

Table 15: Factor Analysis of Stimulus Fourteen

| Factors      | I      | II     | III    | IV     | $h^2$ |
|--------------|--------|--------|--------|--------|-------|
| 1            | .1289  | -.1840 | .3220  | -.6524 | .5797 |
| 2            | .0079  | -.0399 | .1569  | -.7955 | .6590 |
| 3            | .4073  | -.3024 | -.2156 | -.3743 | .4439 |
| 4            | .1236  | .0507  | .9181  | -.0677 | .8654 |
| 6            | .2688  | .3060  | -.0308 | -.6897 | .6425 |
| 7            | .0682  | .0592  | -.2192 | -.6160 | .4357 |
| 8            | -.2364 | *.7464 | .1771  | -.1567 | .6692 |
| 9            | *.6680 | -.0628 | .0116  | -.1489 | .4724 |
| 10           | .3661  | .7011  | -.1725 | .0236  | .6574 |
| 11           | *.7534 | .0635  | .1382  | -.0634 | .5948 |
| 12           | *.5888 | .2002  | .1207  | -.7033 | .8961 |
| 13           | .4681  | .3006  | .0916  | -.5502 | .6207 |
| Eigen Values | 3.9472 | 1.3229 | 1.1880 | 1.0793 |       |

Table 16: Factor Analysis of Stimulus Fifteen

| Factors      | I      | II     | III    | IV     | $h^2$ |
|--------------|--------|--------|--------|--------|-------|
| 1            | .1381  | -.2352 | .5107  | .5594  | .6482 |
| 2            | *.7387 | -.2928 | -.0905 | .1214  | .6543 |
| 3            | .2328  | -.1471 | .1019  | *.6651 | .5286 |
| 4            | .1744  | *.7848 | -.1962 | .0228  | .6854 |
| 6            | *.6694 | .1982  | .2965  | -.0223 | .5758 |
| 7            | .3921  | -.0572 | .5846  | .0839  | .5058 |
| 8            | .0204  | .6728  | .4569  | .0727  | .6671 |
| 9            | .5136  | .1819  | -.0551 | .4925  | .5424 |
| 10           | .0643  | .0734  | *.7388 | .0945  | .5643 |
| 11           | .0282  | .2641  | .0969  | *.8048 | .7277 |
| 12           | .8069  | .1561  | .2796  | .3791  | .8974 |
| 13           | *.8368 | .1895  | .1853  | .1878  | .8057 |
| Eigen Values | 4.1212 | 1.3668 | 1.2727 | 1.0421 |       |

It is recognized that an alternate procedure for interpretation of the factor analyses would be to inspect for loading consistency first, then examine the purity of the loadings. The sequence of the interpretation steps is arbitrary and this author has selected the purity-consistency order rather than the opposite.

#### Consistency of Purity Loadings

As can be seen from the preceding tables, the factor analyses extracted from three to five factors for the various stimuli. In this initial examination of the factor analyses, no attempt will be made to distinguish loadings in terms of dimensions. The question addressed is whether each variable, considered separately, did demonstrate a consistently pure loading, on some factor, in the analysis procedure.

Category One, spatial indicators, demonstrated eight pure loadings out of fifteen possible chances. This category will be retained for further analysis. Category Two, the temporal indicators, yielded nine pure loadings out of fifteen total possible. It, too, will be retained for further analysis. Category Three, larger class indicators, yielded only seven pure loadings. Not meeting the criterion for consistency, Category Three will be eliminated from further analysis. Class inclusion indicators, the fourth category, demonstrated pure loadings in eleven instances. It will be retained for further analysis. Category five was not included in the factor analyses. In the content analysis and subsequent frequency counts the category demonstrated between eighty and one hundred percent non-occurrence of the specified negation trait. It was felt that further

analysis of the category, under these circumstances, would place the factor analyses in the position of analyzing a null set. Category Six, possessive pronoun indicators, loaded within the purity criterion in nine instances. This category, too, will be viewed as consistent and will be retained for further analysis. Category Seven, passivity indicators, demonstrated eight instances of pure loading. It will be retained for further analysis. Category Eight, emotive indicators, met the purity criterion in thirteen of the fifteen instances. Thus it will be viewed as consistent and will be retained for further analysis. Category Nine, modification indicators, met the purity criterion in only six of the fifteen instances.. It is not viewed as consistent in its loadings, and will thus be eliminated from further analysis. Category Ten, intensity indicators, met the purity criterion in nine of the fifteen instances. It too, will be viewed as consistent and be retained for further analysis. Category Eleven, indicators of separation of the communicator from the objects of her communication, yielded five instances of pure loadings. This category is not within the consistency criterion and will be eliminated from further analysis.

Categories Twelve and Thirteen merit precautionary statements. Both were added to the original category system by this author. They had been discarded by Wiener and Mehrabian earlier after the experimental studies failed to reveal a relationship between total words or analyzed units as the immediacy - non-immediacy phenomenon. Their inclusion in the present study was warranted by a need to control within the measuring process for verbosity, a commonly misleading trait of open-ended type responses. Variable Category Twelve, total number of

words per response, yielded only one instance of a pure loading.

Category Thirteen, total units per response, met the purity criterion in four cases. They, too, must be eliminated from further consideration.

This initial examination of the data, then reveals that variable categories one, two, four, six, seven, eight, and ten, met the purity criterion in a better than chance proportion. That is, the probability of greater than .20 has been viewed as a greater than chance occurrence of "pure" loadings in the factor analyses. In this way the probability level has served as the standard for acceptance or rejection of given variables, or categories in the immediacy - non-immediacy phenomenon, in terms of systematic purity loadings across stimuli.

Continuing the interpretation of the data, attention is now given to those results from the perspective of the stimuli. The results will be examined in three ways. First, each stimulus will be considered separately. Next, the stimuli will be viewed in triads, each topical area being examined as a collective whole; third, the stimuli will be examined across topical areas, with attention being given to the replication conditions. The purpose of a multifaceted examination such as this is twofold. First, the examination will provide tentative grounds for consideration of possible regularities across stimuli and replication conditions. Second, it is possible in this way to examine the reliability of the stimuli.

Again employing Siegel's discussion of the binomial test, the criteria for selection of a given stimulus for further consideration will be whether or not five or more of the selected variables

demonstrate a pure loading on that stimulus. The probability for that number of pure loadings occurring by chance is .21. This, again, is a probability level somewhat greater than is normally viewed as acceptable; yet the exploratory nature of the study permits greater latitude in the establishment of an acceptable probability level than might otherwise be considered.

In this way it will be possible to determine those stimuli from which the phenomenon appears to emanate in a systematic manner. Further, the examination will provide the basis for consideration of both topical areas and replication conditions in terms of between-stimuli regularities. Such a consideration is important to the understanding of the immediacy - non-immediacy phenomenon, as it is presently being examined. That is, the study seeks to determine the structure of the phenomenon. Such determination cannot be pursued without establishing grounds for commonality between the conditions which elicited the original data.

#### Consistency of Stimuli in Elicitation of Pure Loadings

Considering, then, categories one, two, four, six, seven, eight and ten across stimuli, it is possible to determine that only stimulus thirteen demonstrates pure loadings of the seven variable categories determined to consistently yield pure loadings in the factor analyses. The following table summarizes the relationship between variable loadings and stimuli:

Table 17: Variables Which Load Pure  
By Stimuli

| Variable | Stimulus |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|----------|----------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|
|          | 1        | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 1        |          | x | x | x |   | x |   |   |   | x  | x  | x  | x  |    |    |
| 2        |          | x | x | x | x | x |   |   |   |    |    | x  | x  |    | x  |
| 4        |          | x | x | x | x |   |   |   |   | x  | x  | x  | x  | x  | x  |
| 6        |          | x |   | x |   | x | x | x | x |    | x  |    | x  |    | x  |
| 7        |          | x | x |   |   | x | x | x |   | x  | x  |    | x  |    |    |
| 8        |          | x | x | x | x | x | x |   | x | x  | x  |    | x  | x  |    |
| 10       |          | x |   | x |   | x |   | x | x | x  |    |    | x  | x  | x  |

Table 17 does not attempt to establish a basis for viewing the configuration of the factor analytic loadings of consistently pure immediacy - non-immediacy variables. Rather, the purpose of the illustration is to establish a basis for determining those stimuli which consistently elicit pure loadings among those variables which have been previously judged to be consistently pure. Again, Siegel's test is employed to establish a greater than chance proportion of pure loadings on each stimulus.\* On this basis, it can be seen that the stimuli which meet this criteria are: one, two, three, five, six, ten, eleven and thirteen.

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\*Employing the formula suggested by Siegel (p. 37) and solving for x with  $p = .20$ ,  $x = 5$ .

In effect, the identification of stimulus objects which yield a greater than chance proportion of pure loadings implies that those stimulus objects which did not yield greater than chance proportions of pure loadings are in some way deficient. An examination of them may provide insight into commonalities between them which are associated in some way with their elimination. This is a particularly important consideration in that the stimulus objects themselves were subjected to judgmental pretesting rather than pretesting through the elicitation of verbal responses. That is, it may well be that some of the stimuli were substandard in their ability to elicit response sets. For these reasons stimuli four, seven, eight, nine, eleven and fifteen will be eliminated from further analysis.

An inspection of the excluded stimulus objects reveals little in terms of a systematic explanation for their apparent failure to elicit the established greater-than-chance proportion of pure factor loadings among the variables determined to be consistent in their purity. Those stimuli are: the positive stimulus dealing with sexual behavior (4); the positive, negative and neutral child related stimuli (7, 8, and 9); the neutral stimuli dealing with religious activities (14 and 15). In total, two positive stimuli, two negative, and three neutral stimuli have been determined to be inconsistent in their elicitation of immediacy - non-immediacy responses. The neutral replication condition, which Wiener and Mehrabian's experimental data indicated would be most effective in response elicitation, appears to be the least effective. Thus this replication condition should be viewed with some caution. Topically, the child-related issues were the least

effective stimuli. One possible explanation can be offered in terms of the population from which the sample was taken. That population is largely student-oriented. The marriages of the women are relatively youthful, and it could well be that child-related issues are not salient topics within these marital relationships. If this were the case then the child-related stimuli would most certainly have been inappropriate for the study. The failure of stimuli four, twelve, fourteen and fifteen is most difficult to explain with the present evidence. One possible explanation is that these stimuli were simply inappropriate and poor selections, despite the pretesting safeguards which were employed in their selection.

Summarizing the interpretation of the factor analyses to this point, the following immediacy - non-immediacy categories have been determined to be consistent in the purity of loading and thus subject to further analyses: one, two, four, six, seven, eight and ten. The stimulus objects to be used for further analysis, also selected on the basis of consistency in elicitation of responses, are: one, two, three, five, six, ten, eleven, thirteen.

Tables 18-25 summarize the factor loadings which have been discussed in the preceeding pages. These tables should be viewed as ones in which the non-relevant items, as established in this discussion, have been masked out. The data has not been reanalyzed, but is presented in this condensed form for interpretational purposes.

The first stimulus, which presented a pictorial representation of social activities from a positive bias, has yielded four factors. The first factor has three pure loadings: temporal indicators, class

inclusion indicators and possessive pronoun indicators. The second factor yielded only one pure loading, emotive indicators. The third factor has no pure loadings, and the fourth factor yielded only one pure loading, the intensity indicators. With reference to the criteria established in Chapter II, no legitimate dimensions of the immediacy - non-immediacy phenomenon can be ascertained from Stimulus One.\* Thus the data from this stimulus will not be further analyzed.

The factor analysis of Stimulus Two, the negative-bias representation of social activities, extracted four factors. Spatial and temporal indicators loaded purely on the first factor; class inclusion indicators were the only pure loading on the second factor; the third factor had no pure loadings; and the passivity and emotive indicators were the pure loadings on the fourth factors. As was the case with the first stimulus object, no legitimate dimension can be ascertained from the factor analysis of the immediacy - non-immediacy phenomenon for this stimulus. Thus the data will not be further analyzed.

Stimulus Three, the neutral-bias representation of social activities, yielded three factors in the analysis. Possessive pronoun indicators and intensity indicators loaded purely on the first factor; spatial indicators loaded purely on the second factor; and class inclusion indicators and emotive indicators loaded purely on the third factor. As was the case with the first and second stimuli, the

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\*It will be recalled that a dimension was operationalized in Chapter II as any factor extracted in the factor analysis with five or more pure loadings of the variables under examination.

Table 18: Factor Loadings of Selected Categories  
for Stimulus One

| Factors | I      | II     | III    | IV     | $h^2$ |
|---------|--------|--------|--------|--------|-------|
| 1       | .4381  | -.2546 | -.4333 | .1362  | .4630 |
| 2       | .8022* | -.0933 | -.0195 | -.1312 | .6665 |
| 4       | .5144* | -.2633 | .2643  | .0103  | .4088 |
| 6       | .8170* | .1040  | -.1655 | .0837  | .7128 |
| 7       | .2475  | .0306  | -.3741 | .5044  | .4566 |
| 8       | .1755  | .7510* | .0154  | -.0431 | .5976 |
| 10      | .0072  | .0455  | .0927  | .9082* | .8356 |

\* Indicates pure loading on Tables 18-25

\*\* Indicates communality on Tables 18-25

Table 19: Factor Loadings of Selected Categories  
for Stimulus Two

| Factors | I      | II     | III    | IV     | h <sup>2</sup> |
|---------|--------|--------|--------|--------|----------------|
| 1       | .5541* | .2974  | .0608  | .0329  | .4081          |
| 2       | .8126* | .0783  | -.0146 | .0993  | .6765          |
| 4       | .1117  | .8853* | -.0885 | .0777  | .8101          |
| 6       | .7421  | -.1585 | -.3522 | .1586  | .7249          |
| 7       | .1054  | .2536  | .2415  | .6720* | .5853          |
| 8       | .1298  | -.1203 | .0894  | .8379* | .7415          |
| 10      | .1433  | .3724  | -.7283 | .0925  | .6982          |

Table 20: Factor Loadings of Selected Categories  
for Stimulus Three

| Factors | I      | II     | III    | $h^2$ |
|---------|--------|--------|--------|-------|
| 1       | -.2999 | .7056* | -.0622 | .5921 |
| 2       | -.1119 | .8384  | .0413  | .7171 |
| 4       | -.1094 | .2356  | .6145* | .4451 |
| 6       | .8097* | .1552  | .0322  | .6808 |
| 7       | .4963  | -.1403 | .4727  | .4894 |
| 8       | .0788  | -.0742 | .7039* | .5072 |
| 10      | .5718* | -.0445 | -.0046 | .3290 |

Table 21: Factor Loadings of Selected Categories  
for Stimulus Five

| Factors | I      | II     | III    | IV     | $h^2$ |
|---------|--------|--------|--------|--------|-------|
| 1       | .3934  | -.2308 | -.3694 | -.3774 | .4869 |
| 2       | .6709* | .2304  | .0928  | .0629  | .5157 |
| 4       | .0396  | .8916* | -.0046 | -.1000 | .8065 |
| 6       | .8091* | .0366  | -.3088 | .1532  | .4866 |
| 7       | .6698* | -.1746 | .0221  | -.0836 | .7749 |
| 8       | .1205  | -.1672 | .1019  | .8567* | .7868 |
| 10      | .4233  | .2500  | -.3796 | .1748  | .4164 |

Table 22: Factor Loadings of Selected Categories  
for Stimulus Six

| Factors | I      | II     | III    | $h^2$ |
|---------|--------|--------|--------|-------|
| 1       | .2946  | .1160  | .6525* | .5156 |
| 2       | .6945* | .1032  | .2086  | .5364 |
| 4       | .2835  | .1625  | -.1582 | .1318 |
| 6       | .7983* | .0811  | .2197  | .6921 |
| 7       | .6793* | .2766  | -.1147 | .5511 |
| 8       | .1475  | .8222* | -.0222 | .6984 |
| 10      | .2339  | .6405* | .0080  | .4650 |

Table 23: Factor Loadings of Selected Categories  
for Stimulus Ten

| Factors | I      | II     | III    | IV     | V      | $h^2$ |
|---------|--------|--------|--------|--------|--------|-------|
| 1       | .0065  | -.0044 | -.0696 | -.1182 | .8572* | .7536 |
| 2       | .0432  | -.1589 | .0870  | -.8356 | .1012  | .7431 |
| 4       | .1858  | .0923  | .7668* | -.2119 | -.2060 | .7183 |
| 6       | .4578  | .2545  | .0361  | -.6157 | .2457  | .7152 |
| 7       | .7261* | .2120  | .1656  | .0194  | -.0271 | .6007 |
| 8       | -.0460 | -.0326 | .8348* | .0686  | .1724  | .7345 |
| 10      | .7579* | -.1186 | -.1711 | -.1759 | -.0748 | .6543 |

Table 24: Factor Loadings of Selected Categories  
for Stimulus Eleven

| Factors | I      | II     | III    | $h^2$ |
|---------|--------|--------|--------|-------|
| 1       | .6880* | .1139  | .1232  | .5016 |
| 2       | .5381  | -.1590 | .3426  | .4322 |
| 4       | .0415  | .2233  | .7016* | .5438 |
| 6       | .7949* | -.0039 | .3010  | .7225 |
| 7       | .1260  | -.0917 | .6339  | .4260 |
| 8       | .0460  | .7675* | .2145  | .6372 |
| 10      | .4354  | .5519  | -.0022 | .4941 |

Table 25: Factor Loadings of Selected Categories  
for Stimulus Thirteen

| Factors | I      | II     | III    | $h^2$ |
|---------|--------|--------|--------|-------|
| 1       | .2901  | -.0905 | .6714* | .5435 |
| 2       | .6112* | .0984  | .2714  | .4569 |
| 4       | .0694  | .7586* | .0982  | .5883 |
| 6       | .6504* | .0880  | .0605  | .4344 |
| 7       | .1535  | .5911* | -.0101 | .3730 |
| 8       | -.0846 | .0080  | .8208* | .6809 |
| 10      | .5668* | -.1376 | .1881  | .3756 |

absence of legitimate dimensions precludes further analysis of the data from this stimulus.

Stimulus Five, the negative representation of sexual activity, yielded five factors in analysis. The first factor was composed of temporal indicators, possessive pronoun indicators and passivity indicators. The second factor had only one pure loading, class inclusion indicators; the third factor had no pure loadings and the fourth factor was composed of emotive indicators.

The neutral replication of sexual activity, Stimulus Six, yielded three factors. Temporal indicators, possessive pronoun indicators and passivity indicators loaded purely on the first factor; emotive indicators and intensity indicators loaded purely on the second factor and spatial indicators loaded purely on the third factor. Thus both of the stimuli dealing with sexual activities will be excluded from further analysis due to the absence of legitimate dimensions as revealed in the factor analysis.

Stimulus Ten, the positive replication of marital economics, yielded five factors in analysis. On factor one passivity indicators and intensity indicators loaded purely; on factor three class inclusion indicators and emotive indicators loaded purely; and on factor five the spatial indicators loaded purely. Factors two and four had no pure loadings. Again, no legitimate dimensions can be ascertained to exist from the results of the factor analysis and the data from Stimulus Ten will not be further analyzed.

The negative replication of marital economics, Stimulus Eleven, yielded three factors in the analysis. Spatial indicators

and possessive pronoun indicators loaded purely on the first factor; emotive indicators loaded purely on the second factor; and class inclusion indicators loaded purely on the third factor. No legitimate dimensions of the phenomenon can be ascertained from the analysis, however, and data from this stimulus will not be further analyzed.

Stimulus Thirteen, the positive replication of religious activities, yielded three factors in the analysis. Temporal indicators, possessive pronoun indicators and intensity indicators loaded purely on the first factor; class inclusion indicators and passivity indicators loaded purely on the second factor; and spatial indicators and emotive indicators loaded purely on the third factor. No legitimate dimensions were derived from the analysis, however, and thus the data from this stimulus, too, will be excluded from further analysis.

#### The Factor Analyses as They Relate to The Research Questions

Three research expectations were posed as guidelines for data analysis, emanating from the theoretic rationale stated in Chapter I of this study. There were:

- I. A Communication Act consists of two basic elements: the first is inherently social, the second inherently psychological in nature.
- II. The social elements of a Communication Act will be manifested in those linguistic traits which denote temporal and spatial relationships between the communicator and the object of the communication.
- III. The psychological elements of the communication act will be manifested in those linguistic traits which indicate the degree of specificity in the communication or detail a relationship between the agent and object of the communication.

These research questions can be explored in terms of a factor analytic examination of language behavior. The present analysis does not confirm any of the expectations. Indeed, the factor analysis fails to offer any insight into the structure of the language behavior of the subjects at all. Inconsistency of each of the operationalized variables, both in terms of purity loadings on factors extracted and in terms of configuration, or groupings of variable categories into legitimate dimensions has typified the present analysis.

Because there are no legitimate dimensions identifiable from the factor analysis there is no data available for the correlation procedures outlined in Chapter II as the next step in the data analysis sequence. Thus the analysis of the data terminated at this point with no support for any of the three research questions which were raised in the theoretic rationale.

### Conclusions

The present chapter has presented data gathering and analysis procedures. Ninety-one married female subjects were randomly selected from married student housing during the summer of 1973 at the University of Oklahoma. Subjects were asked to respond to pictorial representations of five topical areas indicated from the literature to be most salient in the marital relationship. These were: social activities, sex, children, money and religious activities. Each of the topical areas was presented under three replication conditions: positive, negative and neutral.

The responses were content analyzed with the Wiener and Mehrabian immediacy - non-immediacy language categories. The frequency counts from each of these categories were then factor analyzed, using a varimax rotation. The data were inspected for purity or loadings and consistency of purity loadings. Data reduction was based on a greater than chance occurrence of purity formula as suggested by Siegel's (1956) discussion of binomial probability. The data were in this way reduced to seven immediacy - non-immediacy categories which demonstrated consistently pure loadings on eight of the fifteen stimuli.

Examination of the configurations of loadings on the factors extracted in the analyses demonstrated no identifiable dimensions, as operationalized in Chapter II. That is, the extraction of hypothetical factors in statistical analysis does not guarantee the presence of bona fide structural dimensions in a phenomenon. Such was the case with the present set of data. Thus the analysis was terminated at this point, consistent with the contingency data analysis plans outlined in Chapter II.

The following chapter will summarize the study and offer a critique of its strengths and weaknesses as well as suggestions for further study of the immediacy - non-immediacy phenomenon.

## CHAPTER IV

### SUMMARY AND CONCLUSIONS

This study has sought to determine the structure of the immediacy - non-immediacy phenomenon within a marital context through a factor analytic procedure. The present chapter will summarize the study. Limitations and shortcomings of the effort will be explored and suggestions for further study will be based on a critique of those limitations and shortcomings. Such suggestions for future studies of the phenomenon will concentrate on advancement of knowledge with regard to the study of the structure of verbal behavior within the familial context. Selected post hoc data analysis will be presented to guide further investigations of the immediacy - non-immediacy phenomenon.

#### Theoretic Rationale

Immediacy - non-immediacy, as described by Wiener and Mehrabian (1968), is verbal behavior on the part of a communicator which is indicative of that communicator's psychological relationship "between the speaker and the object of his communication, his communication, or his addressee" (p. 3). As the immediacy - non-immediacy hypothesis is

formulated, however, there is an implicit suggestion of variables of an interactive nature operant within the phenomenon. That is, a communicator must be speaking of or to someone or something in order that inferences be made about his state of closeness. The present study has, from the onset, argued that immediacy - non-immediacy, as a communication phenomenon, must contain both psychological and sociological elements.

From this basis the rationale developed for the present study was based on certain conceptual similarities between the family/marital unit and the more general area of small groups. That is, in order to incorporate both the psychological state of the communicator and the interactive and structural issues involved in communication referents, a concept was sought which would contain both. This notion was found within the small groups literature, and specifically, the research related to group cohesion. It was argued that within a marital context the same notion could be easily transferred through Turner's (1970) concept of bonding. Thus it was suggested that the study of the immediacy - non-immediacy phenomenon within a contextually bound setting would provide both highly salient material and surroundings for the subjects. In so doing, it was assumed, stronger and more viable data would be elicited.

Past studies of the family as a social unit have been based largely on demographic data. Those studies which have investigated marital adjustment and success have, for the most part, neglected the dyadic interaction between husband and wife. Emphasis has been placed on similarity, religious and geographical likeness, socio-economic status and the like. The emphasis has been on structural variables which appear to impinge on the husband-wife dyad and in a variety of ways effect the

ongoing maintenance or dissolution of the family unit.

The exception to this general emphasis on macroscopic variables is Turner's work, and particularly his development of the concept of bonding (c.f., 1970, p. 42 ff). Bonding, for Turner, is developed through and during the ongoing interaction between husband and wife. It is the process which molds a social unit from two individual persons. While no attempt is known to this author to extend Turner's bonding concept beyond its present conceptualization, it appears most useful in providing a conceptual transfer from group cohesion, taken from the small groups literature, to the marital context. Further, the Wiener and Mehrabian immediacy - non-immediacy category system could then provide a useful empirical measure of Turner's bonding notion.

This theoretic rationale led to the development of the present investigation. Turner suggested that one member of a group could be bonded to the context of the marriage as well as to the other member. That is, a married person could be bonded to either the marriage, as a structural unit, or to the spouse, in terms of interpersonal attraction. While the present study did not seek to distinguish between these two hypothesized forms of bonding, in terms of verbal behavior of the subjects, Turner's suggestion provided part of the rationale for the use of married females only as subjects. Further rationale for this choice of subjects came from evidence from Wiener and Mehrabian that there is a possible difference between male and female responses in their experimental investigations of immediacy - non-immediacy.

#### Research Hypotheses

While it is inappropriate in an exploratory study such as this

to offer formal research hypotheses, three informal hypotheses, or research expectations, were formulated in order that the researcher's examination of the data be guided from the rationale developed. Those were stated as:

- I. A communication act consists of two basic elements: the first is inherently social, the second inherently psychological in nature.
- II. The social elements of a communication act will be manifested in those linguistic traits which denote temporal and spatial relationships between the communicator and the object of the communication.
- III. The psychological elements of the communication act will be manifested in those linguistic traits which indicate the degree of specificity in the communication or detail a relationship between the agent and the object of the communication.

A factor analysis procedure was employed to investigate the structure of verbal behavior with regard to the immediacy - non-immediacy phenomenon.

Chapters II and III of the study describe in detail the method of subject acquisition, administration and tabulation of the data and the results of data analysis. The factor analyses extracted from three to five factors as each of the fifteen stimulus objects were examined. The variables were inspected for both purity and consistency of loading across stimuli. Of the original thirteen immediacy - non-immediacy categories employed in the content analysis, seven met tests of both purity and consistency. Eight of the fifteen stimulus objects were found to consistently elicit pure factor loadings. The remaining seven stimulus objects did not meet tests of consistency and data from those stimuli were eliminated from further analysis.

As the data from the eight retained stimuli were further inspected no legitimate dimensions of the phenomenon were forthcoming. That

is, it had earlier been determined that a dimension would be operationalized as a factor with five or more pure loadings after the data had been inspected for consistency. In congruence with the research plan, the data analysis terminated at this point and the criterion check with correlation procedures could not be conducted as was intended in the original research plan.

#### Post Hoc Data Analysis

In any research design there are many questions which arise during data analysis which cannot be legitimately answered within the context of formal data analysis procedures. The limitations of the a priori analysis plan serves the rigor of science well. At the same time, however, this same a priori plan for analysis of data may mask subtle evidence within the gathered body of evidence. In the present study the author was most concerned with determining the structure of the immediacy - non-immediacy phenomenon. This investigation was necessarily guided by purity and consistency criteria in the examination of the factor analyses. While none of the factor analyses yielded analyzable dimensions in terms of the a priori criteria established in Chapter II, thirteen of the fifteen stimulus objects did yield one or more factors with two or more consistently pure loadings. Maintaining the exploratory spirit of the research, the author has performed post hoc analysis procedures on these factors. The following table summarizes the stimuli and variables selected for these analyses.

As can be seen from the table, several configurations are suggested within the factor loadings. Immediacy - non-immediacy categories

Table 26: Items Used in Post Hoc Analysis

| Stimulus                                        | Factor | Immediacy - Non-Immediacy<br>Categories Loading Pure                                                           |
|-------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------|
| Stimulus One,<br>Positive Social<br>Activities  | I*     | temporal indicators (2)<br><br>class inclusion indicators<br>(4)<br><br>possessive pronoun indica-<br>tors (6) |
| Stimulus Two,<br>Negative Social<br>Activities  | I*     | spatial indicators (1)<br><br>temporal indicators (2)                                                          |
|                                                 | II     | passivity indicators<br>(7)<br><br>emotive indicators (8)                                                      |
| Stimulus Three,<br>Neutral Social<br>Activities | I*     | possessive pronoun indica-<br>tors (6)<br><br>intensity indicators (10)                                        |
|                                                 | II     | class inclusion indica-<br>tors (4)<br><br>emotive indicators (8)                                              |
| Stimulus Four,<br>Positive Sexual<br>Behavior   | I*     | spatial indicators (1)<br><br>temporal indicators (2)                                                          |

\*Items selected for post hoc correlational procedures

Table 26, continued:

| Stimulus                                       | Factor | Immediacy - Non-Immediacy<br>Categories Loading Pure                                                  |
|------------------------------------------------|--------|-------------------------------------------------------------------------------------------------------|
| Stimulus Five,<br>Negative Sexual<br>Behavior  | I*     | temporal indicators (2)<br><br>possessive pronoun indica-<br>tors (6)<br><br>passivity indicators (7) |
| Stimulus Six,<br>Neutral Sexual<br>Behavior    | I*     | temporal indicators (2)<br><br>possessive pronoun indica-<br>tors (6)<br><br>passivity indicators (7) |
|                                                | II     | emotive indicators (8)<br><br>intensity indicators (10)                                               |
| Stimulus Eight,<br>Negative Child-Related      | I*     | spatial indicators (1)<br><br>possessive pronoun indica-<br>tors (6)                                  |
| Stimulus Nine,<br>Neutral Child-Related        | I      | emotive indicators (8)<br><br>intensity indicators (10)                                               |
| Stimulus Ten,<br>Positive Marital<br>Economics | I*     | passivity indicators (7)<br><br>intensity indicators (10)                                             |
|                                                | II     | class inclusion indicators<br>(4)<br><br>emotive indicators (8)                                       |

Table 26, continued:

| Stimulus                                               | Factor | Immediacy - Non-Immediacy<br>Categories Loading Pure                                                   |
|--------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------|
| Stimulus Eleven,<br>Negative Marital<br>Economics      | I*     | spatial indicators (1)<br><br>possessive pronoun indica-<br>tors (6)                                   |
| Stimulus Twelve,<br>Neutral Marital<br>Economics       | I*     | spatial indicators (1)<br><br>temporal indicators (2)<br><br>possessive pronoun indica-<br>tors (6)    |
| Stimulus Thirteen,<br>Positive Religious<br>Activities | I*     | temporal indicators (2)<br><br>possessive pronoun indica-<br>tors (6)<br><br>intensity indicators (10) |
|                                                        | II     | class inclusion indica-<br>tors (4)<br><br>passivity indicators (7)                                    |
|                                                        | III    | spatial indicators (1)<br><br>emotive indicators (8)                                                   |
| Stimulus Fifteen,<br>Neutral Religious<br>Activities   | I*     | spatial indicators (1)<br><br>possessive pronoun indica-<br>tors (6)                                   |

one, two, six and ten appear together in several cases. That is, the spatial and temporal indicators, categories one and two, appear together in three of the cases examined. Category six, the possessive pronoun indicators, appears with either the spatial or temporal indicators in nine instances, and category ten, intensity indicators, appears with categories one, two or six in two cases. The same is true of category seven, the passivity indicators. In addition, categories seven and ten appear together, without temporal, spatial or possessive pronoun indicators in one instance. Thus, while there is not firm evidence for the argument of an identifiable structure in the immediacy - non-immediacy phenomenon, there is sufficient evidence to warrant further investigation of these categories in correlational procedures. That is, those factors which have yielded some combination of the spatial, temporal, possessive pronoun, passivity and intensity indicators were subjected to post hoc analysis with the correlation procedures.

The analyses proceeded using the criteria outlined in Chapter II. The partial correlation was used rather than the part-order for reasons outlined earlier. The following tables summarize the Pearson product moment correlation of the selected items and the partial correlations. The reader is cautioned to note that the partial correlations are inflated in several cases. McNemar (p. 184) notes:

The difference between  $r_{12.3}$  and  $r_{12}$  indicates how much of the correlation between variables 1 and 2 is due to the influence of heterogeneity of a third variable. Obviously, if the third variable is unrelated to  $X_1$  or  $X_2$ , the partial  $r$  will equal  $r_{12}$ , and if either  $r_{13}$  or  $r_{23}$  is negative and  $r_{12}$  is positive, "partialing out"  $X_3$  will raise the correlation.

This inflation of the partial correlation will be particularly obvious

in Stimulus Eleven, where the computation of the partial correlation results in a coefficient which exceeds unity. McNemar offers no technique - correction of this inflationary effect and for this reason the correlations are reported as calculated, with the aforementioned cautionary note firmly stated.

Table 27: Pearson Product Moment Correlations

| Immediacy - Non-Immediacy | Manifest Anxiety | Marital Adjustment |
|---------------------------|------------------|--------------------|
| Stimulus One              | .1499            | -.1202             |
| Stimulus Two              | -.1659           | -.3395             |
| Stimulus Three            | .0564            | .0217              |
| Stimulus Four             | -.0172           | -.0174             |
| Stimulus Five             | .3984            | .1601              |
| Stimulus Six              | .1354            | .0352              |
| Stimulus Eight            | .0054            | .0598              |
| Stimulus Ten              | .0175            | -.0769             |
| Stimulus Eleven           | .0588            | .0713              |
| Stimulus Twelve           | .0372            | -.3641             |
| Stimulus Thirteen         | .1520            | .1786              |
| Stimulus Fifteen          | .0356            | .0058              |
| Marital Adjustment        | -.6415           |                    |

It should be recalled that the correlations were judged in the present study on the basis of magnitude rather than statistical significance of the computation. The .50 criterion, as discussed in Chapter II, will be used in the judgment of these post hoc procedures. Even with this criterion being maintained, interpretation of the partial correlations reported in Table 28 is in many ways problematic. The study does not seek to establish claims of causality. It seeks, rather, expla-

natory power of the immediacy - non-immediacy phenomenon through the correlation procedures. Yet, as can be determined from Table 28, the strongest of the partial correlations are also those which suffer from the inflation effect noted earlier by McNemar. Thus it must be concluded that, from the present evidence, no statement can be made regarding the interrelationship between the immediacy - non-immediacy phenomenon and either manifest anxiety or marital adjustment as they are currently being operationalized. Such a failure of the correlations, however, does not negate the suggestions of structure which have been noted in the post hoc examination of the factor analyses configurations of loadings.

Table 28: Partial Correlations

| Stimulus          | Manifest Anxiety | Marital Adjustment |
|-------------------|------------------|--------------------|
| Stimulus One      | .0956            | -.0317             |
| Stimulus Two      | -.5316*          | -.5894*            |
| Stimulus Three    | .0917*           | .0756*             |
| Stimulus Four     | -.0369*          | -.0371*            |
| Stimulus Five     | .6618*           | .5908*             |
| Stimulus Six      | .2061*           | .1606*             |
| Stimulus Eight    | .0571*           | .0824*             |
| Stimulus Ten      | .0761            | -.0104             |
| Stimulus Eleven   | .1366*           | .1423*             |
| Stimulus Twelve   | -.2748           | -.4438             |
| Stimulus Thirteen | .3532*           | .3642*             |
| Stimulus Fifteen  | .0513*           | .0374*             |

On the basis of the present evidence, gained through the post hoc examination of the data, the author concludes that the structure of the

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\*Correlations subject to the inflationary conditions noted by McNemar.

immediacy - non-immediacy phenomenon appears to be unidimensional and is composed of categories which have been identified as spatial, temporal, possessive pronoun, passivity and intensity indicators. The other categories in the Wiener and Mehrabian system appear to be nonsystematic in their interrelationship.

#### Limitations of the Present Study

Throughout this study there has been an implicit assumption that verbal behavior can serve as an appropriate index of internal states. That is, the investigation was conducted on the assumption that affective attitudinal positions could be detected and analyzed through the study of verbal behavior. This assumption is indeed not clearly supported, either in the present study or in past empirical literature. Yet the assumption continues to stimulate a great variety of research. The author must argue that the utility of any basic and underlying assumption must be judged in part on the basis of its heuristic value. Seeking methodologically sound modes of pursuing the assumption and establishing confirmation, support or refutation of it is more realistic and fruitful than posing philosophical questions regarding its validity.

Several issues have become increasingly apparent to the author as the present study has been conducted. First, it should be noted that the two predictor measures -- Taylor's manifest anxiety scale and Locke and Wallace's marital adjustment scale -- are highly obvious and direct paper and pencil tests. The population from which the subjects were drawn is well educated and most probably more sophisticated than the general population in terms of ability to intuit the purpose of

a survey questionnaire. Approximately one third of the women who completed the questionnaire took additional time to write direct complaints about the questionnaire, including the lack of validity of the two paper and pencil measures. This, in itself, provides grounds for questioning this type of data gathering device in the study of social and psychological variables and behavior. While the measures of the predictor variables may well be inadequate, however, they remain at the present time the only short-term method for gathering information related to the conceptual areas which were investigated.

The issue of direct versus indirect measures of what Thurstone has called "man's inclinations and feelings, prejudice or bias, preconceived notions or ideas, fears, threats and convictions about a specific topic" (Summers, 1970, p. 128) continues to pose serious methodological and philosophical problems in behavioral science research. Self-report techniques such as those formulated by Taylor and Locke and Wallace continue to be favored by several sound reasons by the majority of behavioral science researchers. They are standardized, have demonstrated some degree of reliability, and thus offer the researcher great control in exploration. Webb and Salancik (Summers, 1970), in their critique of the self-report technique of investigation, have noted:

Our knowledge of attitudes is anchored in information collected from a single method in restricted settings -- verbal self-reports in the laboratory. Methodologically, this is regrettable. . . (Yet) a reasonable concern from controlled measurement, standardized testing, item analysis and easy manipulatable instruments leaves little time or energy for exploring the methodological feasibility of alternative routes to the study of attitudes (p. 317).

Thus, while reliability of the self-report may be well documented through

various statistical techniques, the question of validity remains a perplexing and chronic issue for the behavioral scientist. Little can be done to correct the validity deficiency of self-report paper and pencil measures of psycho-social phenomena. So long as the researcher invades the sphere of interaction with foreign elements, that sphere will continue to be disrupted; and in this sense any measure which is selected by the researcher is to a greater or lesser degree an artificial construct.

For the present study it should be noted that the measures, however artificial and lacking in validity, stand as approximations of the phenomena which were critical to the study of immediacy - non-immediacy. What the measures lack in validity can only be corrected through continual refinement of investigational techniques. The data throughout the study has been interpreted with caution in this regard.

Three limitations -- the measures of manifest anxiety and marital adjustment, the potential inadequacy of the dictionary, and the failure to fully analyze all of the categories originally employed in the content analysis -- constitute the major shortcomings of the present study. Additionally, from the present data no insight can be gained into the language behavior of males in the marital setting, or of the differences or commonalities between husbands and wives with regard to the immediacy - non-immediacy phenomenon. It was noted at the onset of Chapter II that the study is limited in terms of generalizability of results due to the population from which the subjects were selected. Again, it should be restated that the results of the present study can be generalized only to that population of married women residing in married student housing at the University of Oklahoma during the summer

of 1973.

### Suggestions for Further Study

The previous limitations and shortcomings do not negate the investigational efforts extended in the study. Indeed, these serve to establish a format for expansion of research within the area of concern; and further research must be designed to overcome the shortcomings and limitations outlined above. Initially, the data from the present study should be reanalyzed in terms of variability of responses between stimuli. Such an analysis would serve much the same purpose as an item analysis.

Indeed, the initial data for such an appraisal is already extant in the present study, in the form of the descriptive statistics for the immediacy - non-immediacy categories by each stimulus object. Further refinement of the frequency counts, either by transformation or acceptance and analysis of the frequency data as ordinal rather than interval, should be conducted in order that a modified form of item analysis can be conducted. Guilford (1954) suggests that item analysis can serve two ends. "It provides an index of item difficulty and an index of validity, where the term validity is used in a very broad sense" (p. 417). He notes that one way to derive an index of validity of a single item through item analysis is to determine the degree of correlation of that item with the total score. Such a procedure would be available under the present circumstances, whether the data be accepted as ordinal or interval. Thus, item analysis of the data from each stimulus stands as an immediate need, and could be easily conducted from the present data.

Failure to achieve hypothesized results does not and should not stigmatize a set of data. Certain rather arbitrary procedures are always operant in any research effort, and these procedures have an often unnoted effect on the ultimate outcome of the data analysis. In the case of the present study, one of those arbitrary procedures was the establishment of criteria for purity of factor analytic loadings and consistency of loadings in the behavior of the variables across stimuli. It is quite possible that by setting the requirements for both purity and consistency at the levels used for inspection of the data the researcher has unwittingly omitted results which were in some way significant to the research questions. That is, the possibility of Type I error must be considered as suggestions for further research of the phenomenon are formulated.

An exploratory study permits rather broad latitudes in the analysis of data. In certain respects, these latitudes were employed, particularly with respect to the factor analyses of the frequency counts of the category system. Yet great rigor was employed in the inspection of the factor analytic loadings across stimuli. It was believed that the need to compare fifteen separate results demanded some established and guiding rules. Without those rules inspection of the data would have been impossible. The exploratory study should be more willing to accept Type II error than Type I, for accepting an incorrect hypothesis seems more in the spirit of exploration than does the rejection of a valid one. For this reason it is suggested that the present data be re-analyzed from the original factor analyses by inspecting the configurations which loaded purely on the various stimuli.

That is, the present set of data could be reanalyzed from the factor analytic phase of the analysis, treating each stimulus as a separate and independent set of data. The research plan would remain essentially the same, with the exception of the consistency check. In this way the research expectations could be fully explored, stimulus by stimulus. Judgment of the validity of the research expectations could be made at two levels: (1) on the basis of the initial configurations of factor loadings; and (2) on the basis of the correlation procedures. In short, confirmation of the research expectations could be sought in fifteen separate instances, and the consistency check which was employed at the stage of inspection of purity criterion checks would be delayed. Application would be directed to the frequency of significant correlations. Such a procedure would certainly offer greater insight into the nature of the immediacy - non-immediacy phenomenon. By employing this technique, potentially valuable data would not be eliminated in the initial inspections. At the same time, the use of Siegel's binomial probability test would assist in guarding against Type I error.

Another analytic procedure which could be conducted on the present data is an examination of words which were not captured in the content analytic procedure. Such an analysis could be conducted in two ways. First, the data could be hand read, as it was for the dictionary revision. This is a laborious task and has the potential of missing important recurrences of words due to the large volume which must be scanned. A second option is available. A subroutine could be added to the content analysis program which lists by frequency words which were not included in the tagging procedure. Such a listing of skipped words

would provide the researcher with the raw material from which to begin revision of the dictionary. Until a revision of the present dictionary system has been accomplished, further use of the stimulus objects serves little purpose. This revision is viewed as an essential prerequisite to extending the study into differential populations.

Once these procedures have been conducted and the results appraised the study of the immediacy - non-immediacy phenomenon should direct attention to several areas. Descriptions of wider and more general populations should be sought in order to determine whether the dimensionality suggested by the post hoc analysis is a stable one. In this area it would be most desirable to extend analysis to husband-wife dyads and compare male and female responses within a matched-subject design. In addition to providing information about differences between men and women within a specific context, such an analysis would also make it possible to obtain measures of comparable marital relationships. One possibility which might be employed here is the use of couples currently involved in marital counseling as contrasted to 'normal' or randomly selected couples from the same general population. Such a method of selection would reduce the need for overt measures of marital adjustment and possibly psychological adjustment, particularly if couples could be obtained on whom previous psychological data batteries have already been fathered.

The final test of the utility of any concept in the behavioral sciences is the role which that concept and its operationalizations play in the understanding of human affairs. Immediacy - non-immediacy stands as an intriguing and fascinating concept, which can be measured with only

minimal success. As such it contributes little to the core of knowledge which explains human behavior. If it is to achieve such a status both the antecedent and consequent conditions of the phenomenon must be unraveled. This requires first a seeking of correlates to the phenomenon, then experimental procedures to determine time-order relationships between those correlates and the immediacy - non-immediacy phenomenon.

### Conclusions

The present study has attempted to isolate the notion of estrangement, noted from the onset to have intrigued behavioral science both theoretically and empirically for almost two centuries. Current literature, both popular and scholarly, indicates that man's estrangement from fellow interactants and the social world at large constitute one of the major social problems of our age. Yet the estrangement of the single, lone individual too often passes unnoticed in the scientific study of scientific concepts. It was once considered a moral mandate to view subject and researcher engaged in a cooperative and reciprocal relationship. The author seeks to reaffirm that moral mandate by noting the integrity of cooperation between herself and those women who offered, collectively, one hundred or more hours of effort in the conduct of this study. Their responses, many times, were brutally frank and could not have been reported without insight, self-awareness, and a desire to open their personal and private lives to the scrutiny of an unknown and impersonal investigator. Perhaps the despair, the estrangement, and the sadness which they described in those responses can bear some fruit through this and future investigations. Indeed, the role of the scientist and

the role of the human being cannot be separated. This author feels a commitment to that world of women, those who were heard and those who have not yet raised their voices, to provide some small means by which the estrangement between men and women can be both understood and lessened.

## BIBLIOGRAPHY

- Allport, G.W. (1946). "Letters from Jenny." Journal of Abnormal and Social Psychology, 41, 315-350, 449-480.
- \_\_\_\_\_ (1968). "The Historical Background of Modern Social Psychology." G. Lindzey and E. Aronson (Editors), The Handbook of Social Psychology, Volume I, 2nd edition. Reading, Mass.: Addison Wesley.
- Asch, A. (1946). "Forming Impressions of Personality." Journal of Abnormal and Social Psychology, 41, 258-290.
- \_\_\_\_\_ (1952). Social Psychology Englewood Cliffs, N.J.: Prentice-Hall.
- Baldwin, A. (1942). "Personality Structure Analysis: A Statistical Method for Investigating a Single Personality." Journal of Abnormal and Social Psychology, 37, 163-183.
- Becker, J. and J. McArdle (1972). "Nonlexical Speech Similarities as an Index of Intrafamilial Identifications." Journal of Abnormal Psychology, 72, 408-414.
- Berado, F.M. (1967). "Kinship Interaction and Communications Among Space-Age Migrants." Journal of Marriage and the Family, 29, 541-554.
- Berger, P. and H. Kellner (1964). "Marriage and the Construction of Reality." Diogenes, 46, 1-24.
- Brody, S.A. (1963). "Husband-Wife Communication Patterns Related to Marital Adjustment." Unpublished doctoral dissertation, University of Southern California.

- Burgess, E. and L. Cottrell (1939). Predicting Success or Failure in Marriage. Englewood Cliffs, N.J.: Prentice-Hall.
- Burgoon, M. (1972). "A Factor Analytic Examination of Messages Advocating Social Change." Speech Monographs, 39, 290-295.
- Byrne, D. (1961). "Interpersonal Attraction and Attitude Similarity." Journal of Abnormal and Social Psychology, 62, 713-715.
- \_\_\_\_\_, J. Clore and P. Worchel (1966). "The Effect of Economic Similarity-Dissimilarity on Interpersonal Attraction." Journal of Personality and Social Psychology, 4, 220-224.
- \_\_\_\_\_, and J. Buehler (1955). "A Note on the Influence of Propinquity Upon Acquaintaintships." Journal of Abnormal and Social Psychology, 51, 147-148.
- Cicchetti, D.V. (1972). "Reported Family Dynamics and Psychopathology." Journal of Abnormal Psychology, 72, 282-287.
- Cohen, M. and E. Nagel (1934). An Introduction to Logic and the Scientific Method. New York: Harcourt, Brace and World.
- Collins, B.E. and B.H. Raven (1968). "Group Structures: Attractions, Coalitions, Communication and Power." G. Lindzey and E. Aronson (Editors), Handbook of Social Psychology, Volume IV, 2nd edition. Reading, Mass.: Addison Wesley.
- Costello, D.E. (1969). "A Study of the Relationship Between Family Communication Patterns and Adolescent Autonomy." Unpublished doctoral dissertation, Michigan State University.
- Cummings, H.W. (1970). "Specified Cognitive Structures and Their Effects on Language Encoding Behaviors." Unpublished doctoral dissertation, Michigan State University.
- Deitcher, S. (1959). "Development of Interspousal Verbal Communication of College-Educated Couples." Unpublished doctoral dissertation, Cornell University.
- DeVos, G.A. and A.E. Hippler (1968). "Cultural Psychology: Comparative Studies in Human Behavior." G. Lindzey and E. Aronson (Editors), Handbook of Social Psychology, Volume IV, 2nd edition. Reading, Mass.: Addison Wesley.
- Farber, B. (1957). "An Index of Marital Integration." Sociometry, 20, 117-134.
- Ferguson, G. (1971). Statistical Analysis in Psychology and Education, 3rd edition. New York: McGraw-Hill.

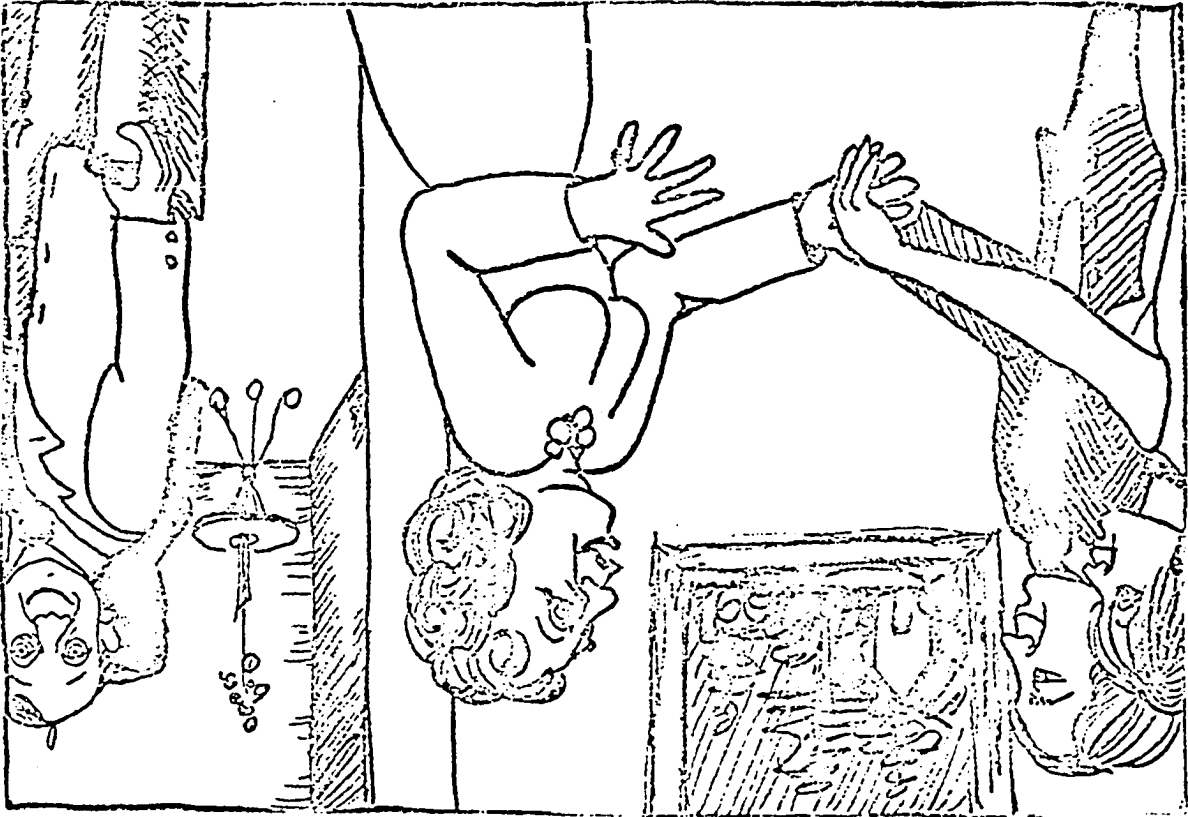
- Festinger, L., S. Schacter and K. Back (1950). Social Pressures in Informal Groups. Stanford: Stanford University Press.
- French, L. (1941). "The Disruption and Cohesion of Groups." Journal of Abnormal and Social Psychology, 36, 361-377.
- Goodman, N. and R. Ofshe (1968). "Empathy, Communication Efficiency and Marital Status." Journal of Marriage and the Family, 30, 597-603.
- Gottheil, E. (1955). "Changes in Social Perceptions Contingent on Competing and Cooperative Groups." Sociometry, 18, 132-137.
- Gottlieb, R., M. Wiener and A. Mehrabian (1967). "Immediacy, DRQ, and Content in Verbalizations About Positive and Negative Experiences." Journal of Personality and Social Psychology, 7, 266-274.
- Griffitt, W. (1966). "Interpersonal Attraction as a Function of Self-Concept and Personality Similarity-Dissimilarity." Journal of Personality and Social Psychology, 4, 581-584.
- Guilford, J. (1956). Psychometric Methods. New York: McGraw-Hill.
- Gundlach, R. (1956). "Effects of On The Job Experiences with Negroes Upon Racial Attitudes of White Workers in Union Shops." Psychological Reports, 2, 67-77.
- Haring, J. (1966). "Freedom of Communication Between Parents and Adolescents with Problems." Unpublished doctoral dissertation, Western Reserve University.
- Holsti, O. (1968). "Content Analysis." G. Lindzey and E. Aronson (Editors), Handbook of Social Psychology, Volume II, 2nd edition. Reading, Mass.: Addison Wesley.
- Jellison, J. and P. Zeisset (1969). "Attraction as a Function of the Commonality and Desirability of a Trait Shared with Another." Journal of Personality and Social Psychology, 11, 115-120.
- Kaplan, A. (1964). The Conduct of Inquiry. San Francisco: Chandler.
- Katz, M. (1965). "Agreement on Connotative Meaning in Marriage." Family Process, 4, 64-73.
- Keller, S. (1971). "Does the Family Have a Future?" Journal of Comparative Family Studies, Spring, 1-14.
- Kidder, L. and D. Campbell (1970). "The Indirect Testing of Social Attitudes." G. Summers (Editor), Attitude Measurement. Chicago: Rand McNally.

- Landis, J. and M. Landis (1968). Building a Successful Marriage, 5th edition. Englewood Cliffs, N.J.: Prentice-Hall.
- Locke, H. and K. Wallace (1959). "Short Marital Adjustment and Prediction Tests: Their Reliability and Validity." Marriage and Family Living, 21, 251-255.
- Maisonneuve, J., C. Palmade and C. Fourment (1952). "Selective Choices and Propinquity." Sociometry, 15, 135-140.
- Marlow, D. and K. Gergen (1968). "Personality and Social Interaction." G. Lindzey and E. Aronson (Editors), Handbook of Social Psychology, Volume III, 2nd edition. Reading, Mass.: Addison Wesley.
- McClelland, D. (1961). The Achieving Society. New York: Free Press.
- McGuire, W. (1968). "The Nature of Attitudes and Attitude Change." G. Lindzey and E. Aronson (Editors), Handbook of Social Psychology, Volume III, 2nd edition. Reading, Mass.: Addison Wesley.
- McNemar, Q. (1954). Psychological Statistics, 3rd edition. New York: Wiley.
- \_\_\_\_\_ (1969). Psychological Statistics, 4th edition. New York: Wiley.
- Mednick, S. (1958). "A Learning Theory Approach to Schizophrenia." Psychological Bulletin, 55, 316-325.
- Mehrabian, A. (1964). "Differences in the Forms of Verbal Communication as a Function of Positive and Negative Affective Experience." Unpublished doctoral dissertation, Clark University.
- \_\_\_\_\_ (1966a). "Attitudes in Relation to the Forms of Communicator-Object Relationship in Spoken Communications." Journal of Personality, 34, 80-93.
- \_\_\_\_\_ (1966b). "Immediacy: An Indicator of Attitudes in Linguistic Communication." Journal of Personality, 34, 26-34.
- \_\_\_\_\_ and M. Wiener (1967)., "Decoding of Inconsistent Communications." Journal of Personality and Social Psychology, 6, 109-114.
- Mulaik, S. (1972). The Foundations of Factor Analysis. New York: McGraw-Hill.
- Navan, L. (1967). "Communication and Adjustment in Marriage." Family Process, 6, 173-184.
- Nisbet, R. (1966). The Sociological Tradition. New York: Basic Books.

- Novak, D. and M. Lerner (1968). "Rejection as a Consequence of Perceived Similarity." Journal of Personality and Social Psychology, 9, 147-152.
- Osgood, C. and T. Sebeok (1969). Psycholinguistics. Bloomington: Indiana University Press.
- \_\_\_\_\_, G. Suci and P. Tannenbaum (1957). The Measurement of Meaning. Urbana: University of Illinois Press.
- Phillips, G. (1966). Communication and the Small Group. Indianapolis: Bobbs-Merrill.
- Sears, D.O. (1968). "Political Behavior." G. Lindzey and E. Aronson (Editors), Handbook of Social Psychology, Volume V, 2nd edition. Reading, Mass.: Addison Wesley.
- Sears, R., E. Maccoby and H. Levin (1957). Patterns of Childrearing. New York: Harper.
- Scott, W. (1968). "Attitude Measurement." G. Lindzey and E. Aronson (Editors), Handbook of Social Psychology, Volume II, 2nd edition. Reading, Mass.: Addison Wesley.
- Schuessler, K. (1971). Analyzing Social Data. Boston: Houghton Mifflin.
- Shaw, M. (1971). Group Dynamics: The Psychology of Small Group Behavior. New York: McGraw-Hill.
- Smith, E., L. Williams and R. Willis (1967). "Race, Sex and Belief as Determinants of Friendship Acceptance." Journal of Personality and Social Psychology, 5, 127-137.
- Sommer, R. (1959). "Studies in Personal Space." Sociometry, 22, 247-260.
- Stendler, C., D. Damrin and A. Haines (1951). "Studies in Cooperation and Competition." Journal of General Psychology, 79, 173-197.
- Stimson, A. (1966). "Marital Interaction Patterns, Effective Communication and Satisfaction: An Exploration of Problem Solving Behavior." Unpublished doctoral dissertation, New York University.
- Stone, P., et al. (1966). The General Inquirer. Cambridge: MIT Press.
- Summers, G. (1970). Attitude Measurement. Chicago: Rand McNally.
- Taguiri, R. (1968). "Person Perception." G. Lindzey and E. Aronson (Editors), Handbook of Social Psychology, Volume III, 2nd edition. Reading, Mass.: Addison Wesley.

- Taylor, J. (1953). "A Personality Scale of Manifest Anxiety." Journal of Abnormal and Social Psychology, 48, 285-290.
- Terman, L. (1938). Psychological Factors in Marital Happiness. New York: McGraw-Hill.
- Thomas, E. (1957). "Effects of Facilitating Role Interdependence on Group Functioning." Human Relations, 10, 347-413.
- Turner, R. (1970). Family Interaction. New York: Wiley.
- Weiss, W. (1968). "Effects of the Mass Media of Communication." G. Lindzey and E. Aronson (Editors), Handbook of Social Psychology, Volume V, 2nd edition. Reading, Mass.: Addison Wesley.
- White, R. (1947). "'Black Boy': A Value Analysis." Journal of Abnormal and Social Psychology, 42, 440-461.
- Wiener, M. and A. Mehrabian (1968). Language Within Language: Immediacy, A Channel in Verbal Communication. New York: Appleton-Century-Crofts.
- Williams, F. (1968). Reasoning with Statistics. New York: Holt, Rinehart and Winston.
- Winch, R. (1971). The Modern Family, 3rd edition. New York: Wiley.
- Zigler, E. and I.R. Child (1968). "Socialization." G. Lindzey and E. Aronson (Editors). Handbook of Social Psychology, Volume IV, 2nd edition. Reading, Mass.: Addison Wesley.

## APPENDIX A: STIMULUS OBJECTS



POSITIVE SOCIAL ACTIVITIES

STIMULUS ONE

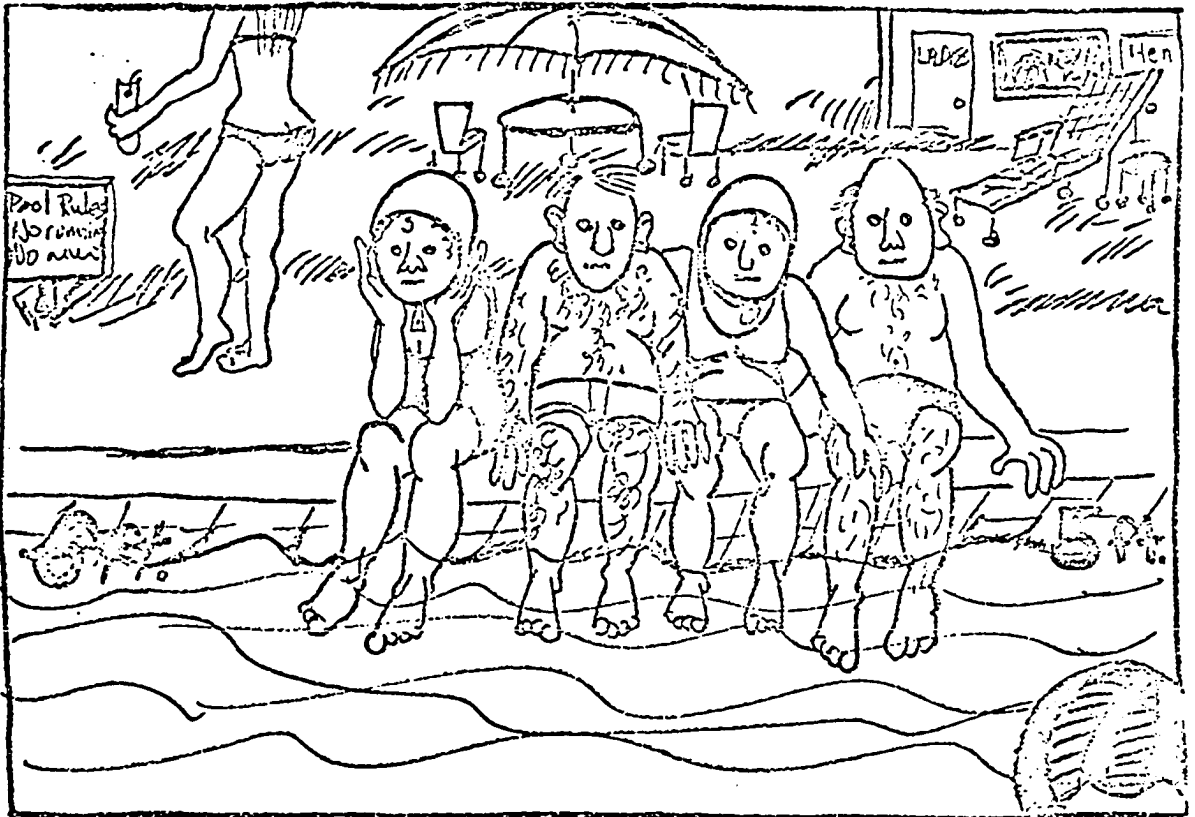
STIMULUS TWO

NEGATIVE SOCIAL ACTIVITIES



STIMULUS THREE

NEUTRAL SOCIAL ACTIVITIES



STIMULUS FOUR  
POSITIVE SEXUAL BEHAVIOR



STIMULUS FIVE

NEGATIVE SEXUAL BEHAVIOR



STIMULUS SIX  
NEUTRAL SEXUAL BEHAVIOR



STIMULUS SEVEN

POSITIVE CHILD-RELATED



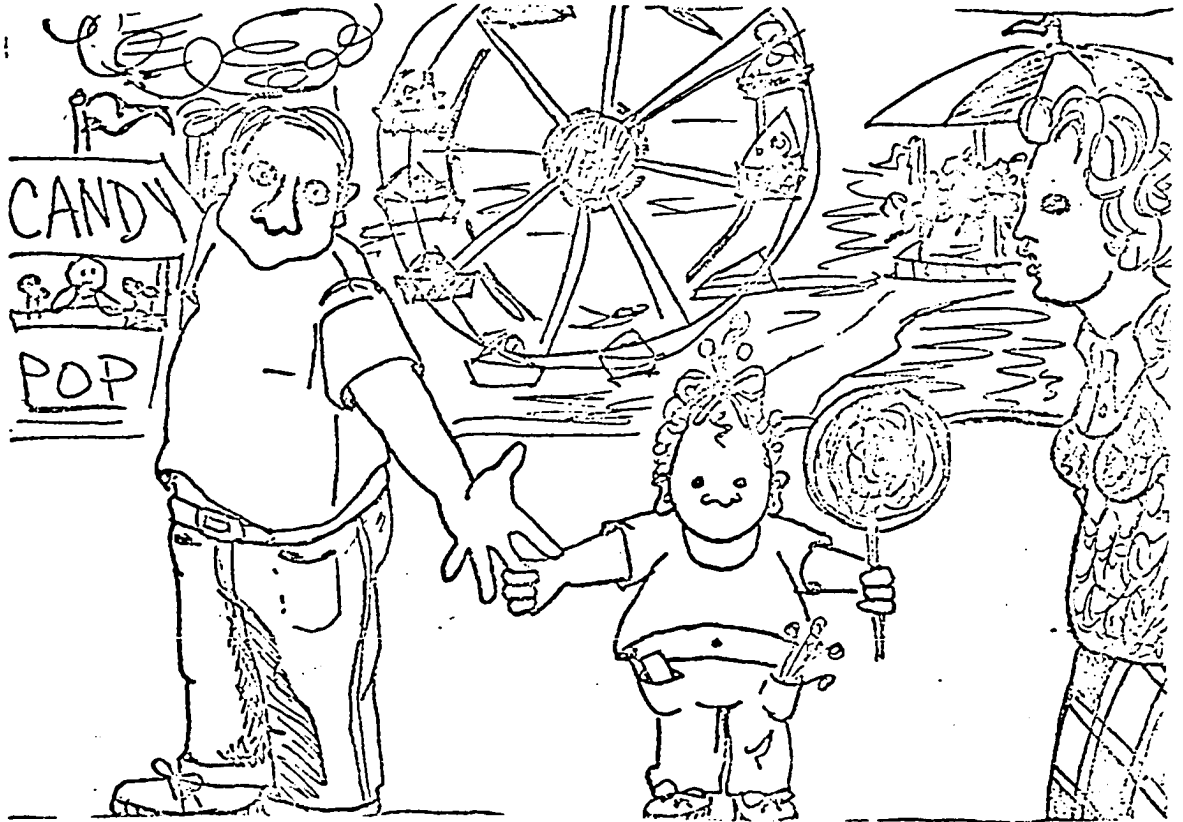
STIMULUS EIGHT

NEGATIVE CHILD-RELATED



STIMULUS NINE

NEUTRAL CHILD-RELATED



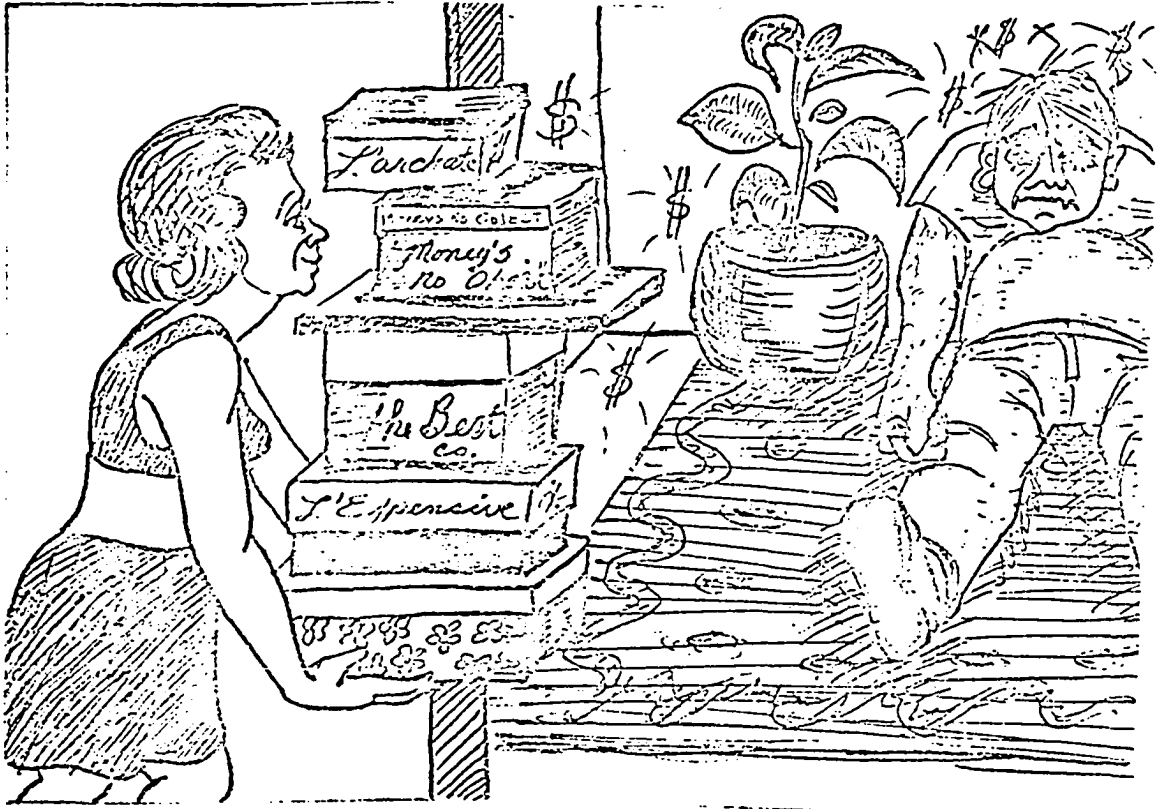
STIMULUS TEN

POSITIVE MARITAL ECONOMICS



STIMULUS ELEVEN

NEGATIVE MARITAL ECONOMICS



STIMULUS TWELVE

NEUTRAL MARITAL ECONOMICS



STIMULUS THIRTEEN

POSITIVE RELIGIOUS ACTIVITIES



STIMULUS FOURTEEN  
NEGATIVE RELIGIOUS ACTIVITIES



STIMULUS FIFTEEN

NEUTRAL RELIGIOUS ACTIVITIES



APPENDIX B:  
MANIFEST ANXIETY SCALE

Scoring: Each statement is dichotomized into "true" and "false" responses. The number of correct responses, as indicated parenthetically, is summed.

I do not tire quickly. (false) .  
I am troubled by attacks of nausea. (true)  
I believe I am no more nervous than most others. (false)  
I have very few headaches. (false)  
I work under a great deal of tension. (true)  
I cannot keep my mind on one thing. (true)  
I worry over money and business. (true)  
I frequently notice my hand shakes when I try to do something. (true)  
I blush no more often than others. (false)  
I have diarrhea once a month or more. (true)  
I worry quite a bit over possible misfortunes. (true)  
I practically never blush. (false)  
I am often afraid that I am going to blush. (true)  
I have nightmares every few nights. (true)  
My hands and feet are usually warm enough. (false)  
I sweat very easily even on cool days. (true)  
Sometimes when embarrassed I break out in a sweat which annoys me greatly.  
(true)  
I hardly ever notice my heart pounding and I am seldom short of breath.  
(false)  
I feel hungry almost all the time. (true)  
I am seldom troubled by constipation. (false)  
I have a great deal of stomach trouble. (true)  
I have had periods in which I lost sleep over worry. (true)  
My sleep is fitful and disturbed. (true)  
I dream frequently about things that are best kept to myself. (true)  
I am easily embarrassed. (true)  
I am more sensitive than most other people. (true)  
I frequently find myself worrying about something. (true)  
I wish I could be as happy as others seem to be. (true)  
I am usually calm and not easily upset. (false)  
I cry easily. (true)  
I feel anxiety about something almost all the time. (true)  
I am happy most of the time. (false)  
It makes me nervous to have to wait. (true)  
I have periods of such great restlessness that I cannot sit long in a  
chair. (true)  
Sometimes I become so excited that I find it hard to get to sleep. (true)  
I have sometimes felt that difficulties were piling up so high that I  
could not overcome them. (true)  
I must admit that I have at times been worried beyond reason over some-  
thing that really did not matter. (true)  
I have very few fears compared to my friends. (false)  
I have been afraid of things or people that I know could not hurt me.  
(true)  
I certainly feel useless at times. (true)  
I find it hard to keep my mind on a task or job. (true)

I am usually self-conscious. (true)  
I am inclined to take things hard. (true)  
I am a high-strung person. (true)  
Life is a strain for me much of the time. (true)  
At times I think I am no good at all. (true)  
I am certainly lacking in self-confidence. (true)  
I sometimes feel that I am about to go to pieces. (true)  
I shrink from facing a crisis or difficulty. (true)  
I am entirely self-confident. (false)

APPENDIX C:  
MARITAL ADJUSTMENT

Scoring: Indicated on each item.

1. Check the dot on the scale line below which best describes the degree of happiness, everything considered, of your present marriage. The middle point, "happy," represents the degree of happiness which most people get from marriage, and the scale gradually ranges on one side to those few who are very unhappy in marriage, and on the other to those few who experience extreme joy or felicity in marriage.

|              |   |   |       |                 |    |    |
|--------------|---|---|-------|-----------------|----|----|
| 0            | 2 | 7 | 15    | 20              | 25 | 30 |
| Very Unhappy |   |   | Happy | Perfectly Happy |    |    |

State the approximate extent of agreement or disagreement between you and your make on the following items. Please check each column.

|                              | Always Agree | Almost Always Agree | Agree Occasionally | Frequently Disagree | Almost Always Disagree | Always Disagree |
|------------------------------|--------------|---------------------|--------------------|---------------------|------------------------|-----------------|
| Handling Family Finances     | 5            | 4                   | 3                  | 2                   | 1                      | 0               |
| Pattern of Recreation        | 5            | 4                   | 3                  | 2                   | 1                      | 0               |
| Demonstration of Affection   | 8            | 6                   | 4                  | 2                   | 1                      | 0               |
| Friends                      | 5            | 4                   | 3                  | 2                   | 1                      | 0               |
| Sex Relations                | 15           | 12                  | 9                  | 4                   | 1                      | 0               |
| Conventionality              | 5            | 4                   | 3                  | 2                   | 1                      | 0               |
| Philosophy of Life           | 5            | 4                   | 3                  | 2                   | 1                      | 0               |
| Ways of Dealing With In-Laws | 5            | 4                   | 3                  | 2                   | 1                      | 0               |

10. When disagreements arise, they usually result in: husband giving in (0); wife giving in (0); agreement by mutual give and take (10).
11. Do you and your mate engage in outside interests together? All of them (10); some of them (8); very few of them (3); none of them (0).
12. In leisure time do you generally prefer: to be 'on the go,' or to stay at home? Does your mate generally prefer: to be 'on the go,' or to stay at home? (Stay at home for both, 10 points; 'on the go' for both, 3 points; disagreement, 2 points.)

APPENDIX D:  
DEMOGRAPHIC DESCRIPTIONS OF SUBJECTS

Number of Years Married

| <u>Years</u> | <u>Frequency</u> |
|--------------|------------------|
| 11           | 21               |
| 2            | 19               |
| 3            | 10               |
| 4            | 5                |
| 5            | 11               |
| 6            | 3                |
| 7            | 7                |
| 8            | 3                |
| 9            | 3                |
| 10           | 1                |
| 11           | 2                |
| 12           | 2                |
| 13           | 1                |
| 14           | 1                |

Income Level

| <u>Income</u>        | <u>Frequency</u> |
|----------------------|------------------|
| less than<br>\$3,000 | 20               |
| \$3,000 -<br>4,500   | 19               |
| \$4,500 -<br>6,000   | 8                |
| \$6,000 -<br>7,500   | 10               |
| \$7,500 and<br>above | 34               |

Number of Children

| <u>Number</u> | <u>Frequency</u> |
|---------------|------------------|
| 0             | 41               |
| 1             | 28               |
| 2             | 17               |
| 3             | 4                |
| 4             | 1                |

Age Range of Subjects

| <u>Age</u> | <u>Frequency</u> |
|------------|------------------|
| 17         | 1                |
| 19         | 5                |
| 20         | 9                |
| 21         | 11               |
| 22         | 9                |
| 23         | 9                |
| 24         | 5                |
| 25         | 8                |
| 26         | 5                |
| 27         | 10               |
| 28         | 2                |
| 29         | 1                |
| 30         | 3                |
| 31         | 3                |
| 32         | 3                |
| 33         | 1                |
| 34         | 2                |
| 35         | 2                |
| 41         | 1                |
| 45         | 1                |

Last Year of Education

| <u>Year</u> | <u>Frequency</u> |
|-------------|------------------|
| 12          | 14               |
| 13          | 5                |
| 14          | 17               |
| 15          | 11               |
| 16          | 29               |
| 17          | 14               |
| 18          | 1                |

APPENDIX E:  
CONTENT ANALYSIS PROGRAM

CAPP: PROC OPTIONS(MAIN);

1

CAPP: PROC OPTIONS(MAIN);

/\*\*\*\*\*

CONTENT ANALYSIS PROGRAM

JULY 1973

PARAMETERS:

COL 1 - 5      NUMBER OF CATEGORIES IN DICTIONARY,  
COL 6 - 10     NUMBER OF DOCUMENTS,  
COL 11 - 15    NUMBER OF VARIABLES    (THIS INCLUDES THE  
                 NUMBER OF CATEGORIES PLUS OTHER KINDS OF  
                 COUNTERS THAT MAY BE INCLUDED, E.G., NUMBER OF  
                 WORDS IN THE DOCUMENT.),  
COL 16 - 20    NUMBER OF RESPONSES PER DOCUMENT,  
COL 22 - 25    = CAPH IF A CONTENT ANALYSIS PLUS STATISTICAL  
                 ANALYSIS IS TO BE PERFORMED,  
                 = CAPP, IF JUST A CONTENT ANALYSIS IS TO BE  
                 PERFORMED,  
                 = HIST, IF JUST A STATISTICAL ANALYSIS IS TO BE  
                 PERFORMED,  
COL 28 - 30    = YES, IF VARIABLES FOR STATISTICAL ANALYSIS ARE  
                 TO BE READ FROM A TAPE OR DISK DEVICE,  
                 = NO, IF THE VARIABLES ARE TO BE READ FROM THE  
                 CARD READER,  
COL 33 - 35    = YES, IF DICTIONARY IS TO BE PRINTED  
                 = NO, IF DICTIONARY IS NOT TO BE PRINTED,  
COL 38 - 40    = YES, IF DICTIONARY INCLUDES A NEGATION  
                 CATEGORY. ALSO, CATEGORY 5 IS ASSUMED TO BE  
                 THE NEGATION CATEGORY WHILE CATEGORIES 3 AND 4  
                 ARE ASSUMED TO CONTAIN THE NEGATED OBJECTS. ,  
                 = NO, IF NO NEGATION CATEGORY IS INCLUDED.

\*\*\*\*\*/

DCL N5 BIT(1) EXT,DICS CHAR(3);

DCL (#WORDS,#SENTEN) EXT FIXED BIN;

DCL SYSIN FILE;

DCL (NSUB,NV) FIXED BIN(15),PROG CHAR(4),(INCORE,PDICT) CHAR(3);

DCL #\_CAT FIXED BIN EXTERNAL;

DCL FREQ(#\_CAT) FIXED BIN CTL;

DCL REED ENTRY((\*) FIXED BIN CTL, 1 (\*),2 CHAR(3), 2 CHAR(2),

2 FIXED BIN, 2 CHAR(400) VAR);

DCL 1 CAT(11),

2 ID CHAR(3), 2 CH CHAR(2), 2 LEN FIXED BIN,

2 LIST CHAR(400) VAR;

DCL DICK ENTRY( 1 (\*),2 CHAR(3), 2 CHAR(2),

2 FIXED BIN, 2 CHAR(400) VAR);

ON ERROR SNAP

PUT FILE(SYSPRINT) SKIP LIST('ERROR CODE',ONCODE);

```

13      GET FILE( SYSIN ) EDIT( #_CAT, NSUB, NV, JR, PROG, INCCRE, PDICT, DIC5 )
      ((4) F(5), X(1), A(4), (3) (X(2), A(3))) ;
14      IF DIC5 = 'YES' THEN N5 = '1'B;
16      ELSE N5 = '0'B;
17      IF PROG = 'HIST' THEN GO TO CAP1;
19      CALL DICK( CAT );
20      IF PDICT = 'YES' THEN DO;
22          PUT FILE( SYSPRINT ) LINE(3) EDIT( 'DICTIONARY USED FOR ANALYSIS
      ')(COL(25),A);
23          DO I = 1 TO #_CAT;
24              PUT FILE( SYSPRINT ) SKIP(2) EDIT( CAT(I))(A(4),A(3),F(4),
25                  X(1),A(LEN(I))) ;          END;

```

CAPP: PROC OPTIONS(MAIN);

```

26      END;
27      PUT FILE(SYSPRINT) LINE(2) EDIT( 'ANALYZED AND FLAGGED RESPONSES' )
      (COL(25),A);
28      PUT FILE(SYSPRINT) SKIP(3);
29      ALLOCATE FREQ;
30      CALL REED(FREQ,CAT);
31      PUT FILE(SYSPRINT) SKIP(3) EDIT( 'TOTAL NUMBER OF WORDS AND SENTENCE
S ANALYZED IN THIS ANALYSIS.', 'NUMBER OF WORDS', #WORDS, 'NUMBER OF SENTEN
NCES', #SENTEN)(A, SKIP, (2) (COL(10),A,F(12))) ;
32      IF PROG = 'CAPP' THEN GOTO CAP2;
34      CAP1: BEGIN;
35      DCL BT BIT(1);
36      DCL CORR ENTRY(FIXED BIN, FIXED BIN, FIXED BIN, (*,*) FLOAT BIN, (*
      ) FLOAT BIN, (*,*) FLOAT BIN, (*,*) FLOAT BIN, (*,*) FLOAT BIN);
37      DCL HISTOGRAM ENTRY((* ,*) FLOAT BIN, FIXED BIN(15), CHAR(5), FIXED BIN,
      FIXED BIN, FIXED BIN);
38      DCL ERROR EXT CHAR(1);
39      DCL(XBAR(NV), STD(NV), B(NV), RX(NV, NV), R(NV, NV) ) FLOAT BIN;
40      DCL TITLE CHAR(5), X(NSUB, NV) FLOAT BIN;
41      DCL FRQCT FILE;
42      CLOSE FILE(FRQCT);
43      IF INCCRE = 'YES' THEN DO; TITLE = 'FRQCT'; BY='1'B; END;
48      ELSE DO; TITLE = 'SYSIN'; BY='0'B; END;

```

```

52      DO IR = 1 TO JR;
53          IF BT THEN JJ = IR;
54              ELSE JJ = 1;
55          CALL HISTCGM(X,NSUB,TITLE,NV,JJ,JR);
56          CALL CORR(NSUB,NV,NV,X,XBAR,STD,RX,R,B);
57          PUT FILE(SYSPRINT) PAGE EDIT('CORRELATIONAL ANALYSIS')
58              (CCL(25),A);
59          PUT FILE(SYSPRINT) SKIP(2) EDIT('MEANS')(COL(10),A);
60          PUT FILE(SYSPRINT) EDIT((XBAR(J) DO J=1 TO NV))(SKIP,COL(10),
61              (7) F(15,5));
62          PUT FILE(SYSPRINT) SKIP(2) EDIT('STANDARD DEVIATIONS')
63              (COL(25),A);
64          PUT FILE(SYSPRINT) EDIT((STD(J) DO J=1 TO NV))
65              (SKIP,COL(10),(7) F(15,5));
66          PUT FILE(SYSPRINT) SKIP(2) EDIT('CORRELATION COEFFICIENTS')
67              (COL(25),A);
68          DO I = 1 TO NV;
69              PUT FILE(SYSPRINT) EDIT('ROW',I)(SKIP(2),COL(10),A,F(4));
70              PUT FILE(SYSPRINT) EDIT((R(I,J) DO J=1 TO NV))
71                  (SKIP,COL(10),(12) F(9,5));
72              PUT FILE(SYSPCH) SKIP EDIT(IR,(R(I,J) DO J=1 TO NV))
73                  (F(8),(NV) F(8,5));
74          END;
75          END;      END CAP1;
76      CAP2: PUT FILE(SYSPRINT) SKIP(5) EDIT('END OF ANALYSIS.')(COL(10),A);
77      END CAPP;

```

DICK: PROC( CAT ) RECRDER;

```
1      DICK: PROC( CAT ) REORDER;
2      DCL 1 CAT(*),
          2 I CHAR(3), 2 C CHAR(2), 2 LEN FIXED BIN,
          2 L CHAR(40) VAR;
3      DCL #_CAT FIXED BIN(15) EXT;
4      DO K = 1 TO #_CAT;
5          GET FILE( SYSIN ) LIST( I(K),C(K),L(K));
6          LEN(K) = INDEX(L(K),' ');
7      END;
8      RETURN;
9      END DICK;
```

/\* PROCEDURE TO READ IN SUBJECTS' RESPONSES. \*/

```

1  /* PROCEDURE TO READ IN SUBJECTS' RESPONSES. */
2  REED: PROC (FR,CAT);
3  DCL 1 CAT(*), 2 IDEN CHAR(3), 2 KEY CHAR(2), 2 LEN FIXED BIN,
4      2 LIS CHAR(400) VAR;
5      DCL ( #WORDS, #SENTEN ) FIXED BIN EXT;
6      DCL CARD CHAR(80), ID CHAR(10), DATA CHAR(2400) VAR, $SIGN FIXED
7      BIN, CCCC CHAR(80) VAR;
8      DCL COUNT ENTRY (CHAR(2400) VAR, (*) FIXED BIN CTL,
9          1 (*), 2 CHAR(3), 2 CHAR(2),
10         2 FIXED BIN, 2 CHAR(400) VAR, CHAR(10) );
11     DCL FR(*) FIXED BIN CTL;
12     ON ENDFILE(SYSIN) /* FINISHED READING ALL RESPONSES */ GO TO RET;
13     #WORDS, #SENTEN = 0;
14     START: I = 0;
15     ID = 'ID'; DATA = ' ';
16     GET FILE( SYSIN ) SKIP;
17     IN: GET FILE(SYSIN) ECIT(CARD) (A(80));
18     $SIGN = INDEX(CARD, '$');
19     IF $SIGN = 0 /* IS THIS NOT THE LAST CARD */ THEN DO;
20         IF I = 0 /* IS THIS THE FIRST CARD */ THEN DO;
21             ID = SUBSTR(CARD,1,10);
22             DATA = SUBSTR(CARD,11,70);
23             END;
24         ELSE DATA = DATA || CARD;
25         END;
26     ELSE DO;
27         IF I = 0 THEN DO; ID = SUBSTR(CARD,1,10);
28             DATA = SUBSTR(CARD,11,$SIGN-1); END;
29         ELSE DATA = DATA || SUBSTR(CARD,1,$SIGN-1);
30         CALL COUNT(DATA,FR,CAT,ID); /* ANALYZE RESPONSES */
31         GO TO START; /* GET RESPONSES FROM NEW SUBJECT */
32     END;
33     I = I + 1;
34     GO TO IN; /* GET MORE OF THE SUBJECT'S RESPONSE */
35     RET: RETURN;
36     END REED;

```

/\* PROCEDURE TO FIND WORDS AND ANALYZE \*/

```

1      /* PROCEDURE TO FIND WORDS AND ANALYZE */
2      COUNT: PROC(DATA,FREQ,C,ID);
3          DCL ( WW1,WW2,WW3 ) CHAR(30) VAR;
4          DCL (#WRESP,#SENTRSP,(#_CAT,#WORDS,#SENTEN) EXT, BL,P2,LBL,LEN,FLAG,
5              PERIOD,START,BEG,BLANK,CAT,FREQ(*) CTL          ) FIXED BIN(15);
6          DCL XX CHAR(1),ID CHAR(10), DATA CHAR(2400) VAR, SENT CHAR(200) VAR,
7              ( WD, WD1 ) CHAR(30) VAR, CUT CHAR(400) VAR INIT(' '),
8              SUFFIX CHAR(5) VAR, CCC CHAR(2), ( CYCLE,LABEL1 ) LABEL;
9          DCL I C(*),2 I1 CHAR(3),2 I2 CHAR(2),2 I3 FIXED BIN, 2 T CHAR(400)
10              VAR;
11          DCL TIMES FIXED BIN(15), N5 BIT(1) EXT; DCL SUMF FIXED BIN(15);
12          ON ERROR GO TO S12;
13          PUT SKIP(2) EDIT('*')(A(1));
14          PUT FILE( SYSPRINT )          EDIT(ID)(A(10));
15          FREQ = 0;
16          #WRESP,#SENTRSP = 0;
17          START = 1;
18          ILENDAT = LENGTH(DATA);
19          /* CHECK FOR END OF RESPONSE. */
20          HERE: IF START < ILENDAT THEN GOTC ADDITION;
21              PERIOD = INDEX(SUBSTR(DATA,START ),'. ');
22              IF PERIOD <= 1 THEN GOTO ADDITION;
23              BEG = 1;
24              SENT = SUBSTR(DATA,START,PERIOD) || ' ';
25          PROCESS: BLANK = INDEX(SUBSTR(SENT,BEG),'.')-1;
26              IBL = INDEX(SUBSTR(SENT,BEG),',') - 1;
27              IF IBL <= BLANK THEN IF IBL < 0 THEN BLANK = IBL + 1;
28              CAT = 0;
29              I1 = BEG + BLANK - 1; IFL = 0;
30              IF BLANK <= 0 THEN DO; BEG = BEG + 1; GO TO PROCESS; END;
31              ELSE XX = SUBSTR(SENT,I1,1);
32              IF XX = '.' THEN BLANK = BLANK - 1;
33              IF XX = ',' THEN DO;
34                  BLANK = BLANK - 1;
35                  IFL = 1;
36                  END;
37              ELSE;
38                  WD = SUBSTR(SENT,BEG,BLANK);
39                  L = BLANK;
40                  GOTO FIND;
41          S30: CCC = SUBSTR(CHAR(CAT,10),8,2);
42              IF CAT <= 0 THEN DO; WD = WD || '/' || CCC || '/'; FREQ(CAT) =
43                  FREQ(CAT) + 1; END;
44              IF XX = ','
45                  THEN WD = WD || ',';

```

```

56      IF XX = '.'
57
58      THEN DO:
59          CYCLE = PROCESS;
60          BEG = REG + BLANK + IFL;
61          GO TO RITE;
62          END;
63      ELSE DO:
64          WD = WD || '.';
65          START = START + PERIOD;
66          CYCLE = RITE1;
67          GO TO RITE;
68          END;
69
70      RITE: OUT = OUT || ' ' || WD;
71
72      #WORDS = #WORDS + 1 + FLAG;
73      #WRESP = #WRESP + 1 + FLAG;
74      GO TO CYCLE;
75      RITE1: PUT FILE( SYSPRINT) EDIT( OUT )      ( A );
76      #SENTEN = #SENTEN + 1;
77      #SENTRSP = #SENTRSP + 1;
78      OUT = ' ';
79      GO TO HERE;
80      ADDITION: SUMF = SUM(FREQ);
81      PUT FILE(FRQCT) ECIT(ID,FREQ,#WRESP,#SENTRSP,SUMF)(COL(1),A(10),
82                                     (#_CAT+3) F(4));
83      PUT FILE(SYSPCH) EDIT(ID,FREQ,#WRESP,#SENTRSP,SUMF)(CCL(1),A(10),
84                                     (#_CAT+3) F(4));
85      PUT FILE(SYSPRINT) SKIP EDIT(FREQ,#WRESP,#SENTRSP,SUMF)(F(5));
86      S12:
87      RETURN;
88      FIND: /* PROCEDURE TO LOOK UP WORDS IN DICTIONARY */
89      LABEL1 = CHCK;
90      IF BEG <= 3 THEN DO: I = 11; GOTO S10;      END;
91      IF SUBSTR(WD,1,1) = 'N' THEN DO: I = 5; GOTO S10;  END;
92      IF L < 5 THEN GOTO S05;
93      ELSE:
94          SUFFIX = SUBSTR(WD,L - 1,2);
95          IF SUFFIX = 'LY' THEN IF L > 4
96              THEN DO: I=10; GOTO FOUND; END;
97          IF SUFFIX = 'ED' THEN IF L > 4
98              THEN DO: I=2; GOTO FOUND; END;
99      S05: IF L > 2 THEN IF L < 5 THEN I = 2;
100          ELSE I = 4;
101          ELSE I = 6;
102      S10:  FLAG = 0;

```

```

115 WW1 = ', ' || WD || ', ';
116 P2 = BEG + L + 1 + IFL;
117 LBL = INDEX(SUBSTR(SENT,P2),', ' ) - 1;
118 IF LBL > 2 THEN DO; WD1 = SUBSTR(SENT,P2,LBL);
121 ICOM = INDEX(WD1,', ');
122 IF ICOM > 0 THEN DO;
124 LBL = LBL - 1;
125 WD1 = SUBSTR(WD1,1,LBL);
126 END;
127 ELSE;
128 WW2 = ', ' || WD || '---' || WD1 || ', ' ; END;
130 ELSE WD1,WW2 = ', ' ;
131 ANF :DO TIMES = 1 TO #_CAT;
132 IMM1,MINUSES = INDEX(T(I),'---');
133 JMM2,MINASPER = INDEX(T(I),'-E');
134 BL = INDEX(T(I), WW1 );
135 IF BL > 0 THEN IF I=5 THEN IF N5 THEN DO;
139 IF LBL<=1 THEN GOTO S30;
141 WW3 = ', ' || WD1 || ', ' ;
142 DO IKKI = 3 TO 4;
143 BL=INDEX(T(IKKI), WW3 );
144 IF BL>0 THEN GOTO FOUND1;
146 END;
147 IF WD1 = 'HERE' THEN DO; I=1;GOTO FOUND1; END;
152 ELSE;
153 GOTO S30;
154 END;
155 ELSE GOTO FOUND;
156 ELSE GOTO FOUND;
157 IF LBL <= 2 THEN GOTO ASPERCK;
159 BL = INDEX(T(I), WW2);
160 IF BL > 0 THEN GOTO FOUND1;
162 CHCK: IF IMM1 = 0 THEN IF JMM2 = 0 THEN GOTO FAIL;
165 ELSE GOTO ASPERCK;
166 ELSE;
167 LABEL1 = CHCK;
168 LEN = INDEX(SUBSTR(T(I),MINUSES ),', ')-3;
169 IF LEN >=LBL THEN GO TO ASPERCK;
171 SUFFIX = SUBSTR(WD1,LBL-LEN+1,LEN);
172 BL = INDEX(T(I),', ' || WD || '---' || SUFFIX || ', ' );
173 IF BL > 0 THEN GOTO FOUND1;
175 ASPERCK:
176 IF JMM2 = 0 THEN GOTO S20;
177 LEN = INDEX(SUBSTR(T(I),MINASPER ),', ')-3;
178 IF LEN >=L THEN GOTO S20;

```

```

180      SUFFIX = SUBSTR(WD,L-LEN+1,LEN);
181      IF SUFFIX = SUBSTR(T(I),MINASPER+2,LEN)
182          THEN IF L > 4 THEN GOTO FOUND;
184      S20: IMM1 = INDEX(SUBSTR(T(I),MINUSES+2),'--');
185      JMM2 = INDEX(SUBSTR(T(I),MINASPER+2),'-&');
186      IF IMM1 = 0 THEN IF JMM2 = 0 THEN GOTO FAIL;
189      IF LBL <= 2 THEN DO; LABEL1 = ASPERCK; IF JMM2 = 0 THEN GOTO FAIL; END;
195      MINUSES = MINUSES + IMM1 + 1;
196      MINASPER = MINASPER + JMM2 + 1;
197      GO TO LABEL1;
198      FAIL : I = I + 1;
199      IF I > #_CAT THEN I = 1;
201      FLAG = 0;
202      END ANF;
203      GO TO S30;
204      FOUND1:WD = WD || ' ' || WD1;
205      IF ICOM > 0 THEN DO; WD = WD || ','; LBL = LBL + 1; END; ELSE;
211      BEG = BEG + LBL + 1;
212      FLAG = 1;
213      FOUND:CAT = 1;
214      GO TO S30;
215      END COUNT;

```

SCALE: PROC(N,PCT,NX) REORDER;

```
1      SCALE: PROC(N,PCT,NX) REORDER;  
2      DCL( N, PMAX,NX,PCT(*) ) FIXED BIN(15);  
3      PMAX = 0 ;  
4      DO I = 1 TO N;  
5          PMAX = MAX(PMAX,PCT(I));  END;  
6      DO I = 0 TO 2 WHILE(PMAX>10*2**I);  
7          END;  
8      IF PMAX > 80 THEN NX = 100;  
9          ELSE NX = 10*2**I;  
10     END SCALE;  
11  
12
```

INTERVL: PROC(MIN, MAX, DEL, LO );

```
1      INTERVL: PROC(MIN, MAX, DEL, LG );
2      DCL ( MIN, MAX, DEL, LO ) FLOAT BIN;
3      IF MAX = MIN THEN DO; ILOG = 1; GO TO S1; END;
8      ILOG = LOG10(MAX - MIN );
9      S1: I = ( MAX - MIN ) / 10** ( ILOG - 1 );
10     IF I < 16 THEN I = 1;
12         ELSE IF I < 28 THEN I = 2;
14             ELSE IF I < 40 THEN I = 4;
16                 ELSE IF I < 80 THEN I = 5;
18                     ELSE I = 10;
19
20     DEL = I * 10** ( ILOG - 1 );
21     ILO = MIN / DEL ;
22     LO = ILO * DEL;
    END INTERVL;
```

APPENDIX F:  
REVISED DICTIONARY FOR CONTENT ANALYSIS

- Category 1: that, those, where, how, there, not here, a, an
- Category 2: were, was, had, is \_\_\_\_ing, are \_\_\_\_ing, am \_\_\_\_ing, will, shall, went, did, have been, have gone, have done, during, when while, before, after, first, later
- Category 3: it, one, arm, leg, hand, head, eye, dress, suit, feet, face, faces, eyes, stomach, tummy, belly
- Category 4: everybody, all, they, somebody, them, women, men, husbands, wives, children, friends, ministers, priests, pastors
- Category 5: all items in Categories 3 and 4 followed or preceded by no, none, nothing, not, never
- Category 6: its, he, she, his, her, my, mine, anybody, anything, something
- Category 7: have to, forced to, has to, should, must, because, but, however, or, else
- Category 8: I think, I feel, I hope, is possible, it seems, perhaps, somehow, just, maybe, I wish, might be
- Category 9: some, few, many, often seldom, very, at all, more, anymore, \_\_\_\_est, \_\_\_\_er
- Category 10: all "ly" suffixes (supression of the word "family")
- Category 11: sentences beginning with: the man, the woman, they, the husband, the wife, this, \_\_\_\_ing

APPENDIX G:

DESCRIPTIVE STATISTICS FOR CONTENT ANALYSIS CATEGORIES

Stimulus One

| Category | Mean  | Median | Mode | s     | Range | G <sub>1</sub> * | G <sub>2</sub> ** |
|----------|-------|--------|------|-------|-------|------------------|-------------------|
| 1        | 0.78  | 2.00   | 0.00 | 1.11  | 0 - 5 | 1.46             | 5.66              |
| 2        | 1.58  | 4.00   | 1.00 | 1.54  | 0 - 8 | 1.40             | 5.35              |
| 3        | 0.20  | 0.00   | 0.00 | 0.54  | 0 - 2 | 2.21             | 181.18            |
| 4        | 0.65  | 1.00   | 0.00 | 0.86  | 0 - 3 | 1.27             | 15.44             |
| 5        | 0.00  | 0.00   | 0.00 | 0.00  | 0     | 0.00             | -3.00             |
| 6        | 1.96  | 5.00   | 0.00 | 2.14  | 0 - 8 | 0.75             | -1.12             |
| 7        | 0.20  | 1.00   | 0.00 | 0.43  | 0 - 2 | 1.94             | 180.94            |
| 8        | 0.08  | 0.00   | 0.00 | 0.27  | 0 - 1 | 3.18             | 2147.22           |
| 9        | 0.69  | 0.00   | 0.00 | 0.83  | 0 - 4 | 1.34             | 25.98             |
| 10       | 0.24  | 0.00   | 0.00 | 0.56  | 0 - 3 | 2.60             | 107.69            |
| 11       | 1.11  | 3.00   | 1.00 | 1.06  | 0 - 4 | 0.97             | 18.22             |
| 12       | 23.67 | 51.00  | 5.00 | 15.96 | 0 -75 | 1.12             | -2.97             |
| 13       | 2.56  | 4.00   | 2.00 | 1.42  | 0 - 7 | 0.99             | 60.93             |

Stimulus Two

| Category | Mean  | Median | Mode  | s     | Range | G <sub>1</sub> | G <sub>2</sub> |
|----------|-------|--------|-------|-------|-------|----------------|----------------|
| 1        | 1.04  | 1.00   | 1.00  | 1.05  | 0 - 5 | 1.12           | 16.73          |
| 2        | 1.32  | 1.00   | 0.00  | 1.45  | 0 - 6 | 1.14           | 3.31           |
| 3        | 0.52  | 1.00   | 0.00  | 0.85  | 0 - 5 | 2.20           | 26.11          |
| 4        | 0.23  | 0.00   | 0.00  | 0.68  | 0 - 5 | 4.49           | 133.86         |
| 5        | 0.00  | 0.00   | 0.00  | 0.00  | 0     | 0.00           | -3.00          |
| 6        | 2.87  | 3.00   | 2.00  | 2.27  | 0 -10 | 0.93           | 1.82           |
| 7        | 0.60  | 0.00   | 0.00  | 0.93  | 0 - 5 | 2.03           | 16.46          |
| 8        | 0.09  | 0.00   | 0.00  | 0.32  | 0 - 2 | 3.87           | 1744.53        |
| 9        | 0.67  | 0.00   | 0.00  | 1.03  | 0 - 5 | 2.15           | 11.24          |
| 10       | 0.42  | 0.00   | 0.00  | 0.70  | 0 - 3 | 1.56           | 26.35          |
| 11       | 1.16  | 0.00   | 1.00  | 1.27  | 0 - 6 | 1.70           | 9.09           |
| 12       | 28.63 | 14.00  | 10.00 | 19.97 | 0 -90 | 1.23           | -2.99          |
| 13       | 3.12  | 2.00   | 2.00  | 1.97  | 0 -10 | 1.14           | 13.67          |

\*G<sub>1</sub> represents the skewness calculation throughout this appendix.

\*\*G<sub>2</sub> represents the kurtosis calculation throughout this appendix.

Stimulus Three

| Category | Mean  | Median | Mode  | s     | Range | G <sub>1</sub> | G <sub>2</sub> |
|----------|-------|--------|-------|-------|-------|----------------|----------------|
| 1        | 0.66  | 2.00   | 0.00  | 0.90  | 0 - 5 | 1.93           | 22.48          |
| 2        | 1.00  | 3.00   | 0.00  | 1.65  | 0 -12 | 3.95           | 2.94           |
| 3        | 0.53  | 0.00   | 0.00  | 0.92  | 0 - 4 | 2.01           | 12.50          |
| 4        | 0.44  | 0.00   | 0.00  | 0.70  | 0 - 3 | 1.47           | 22.92          |
| 5        | 0.04  | 0.00   | 0.00  | 0.21  | 0 - 1 | 4.45           | 11515.30       |
| 6        | 2.20  | 8.00   | 0.00  | 2.89  | 0 -17 | 2.18           | -2.23          |
| 7        | 0.32  | 0.00   | 0.00  | 0.63  | 0 - 3 | 2.05           | 50.63          |
| 8        | 0.10  | 0.00   | 0.00  | 0.34  | 0 - 2 | 3.54           | 1261.39        |
| 9        | 0.86  | 3.00   | 0.00  | 1.08  | 0 - 6 | 1.77           | 11.92          |
| 10       | 0.27  | 1.00   | 0.00  | 0.56  | 0 - 2 | 1.91           | 65.16          |
| 11       | 1.07  | 3.00   | 0.00  | 1.22  | 0 - 5 | 1.06           | 5.97           |
| 12       | 23.82 | 55.00  | 10.00 | 18.33 | 1-114 | 1.89           | -2.99          |
| 13       | 2.55  | 6.00   | 1.00  | 1.66  | 1 - 8 | 1.20           | 21.20          |

Stimulus Four

| Category | Mean  | Median | Mode | s     | Range | G <sub>1</sub> | G <sub>2</sub> |
|----------|-------|--------|------|-------|-------|----------------|----------------|
| 1        | 0.79  | 0.00   | 0.00 | 0.96  | 0 - 4 | 1.41           | 15.09          |
| 2        | 1.13  | 0.00   | 0.00 | 1.47  | 0 - 8 | 2.41           | 4.05           |
| 3        | 0.46  | 0.00   | 0.00 | 0.72  | 0 - 3 | 1.57           | 27.91          |
| 4        | 0.08  | 0.00   | 0.00 | 0.27  | 0 - 1 | 3.18           | 2147.22        |
| 5        | 0.01  | 0.00   | 0.00 | 0.10  | 0 - 1 | 9.38           | 737098.06      |
| 6        | 2.91  | 1.00   | 0.00 | 2.49  | 0 - 9 | 0.75           | -0.28          |
| 7        | 0.46  | 0.00   | 0.00 | 0.64  | 0 - 2 | 1.05           | 29.76          |
| 8        | 0.09  | 0.00   | 0.00 | 0.28  | 0 - 1 | 2.91           | 1437.94        |
| 9        | 0.48  | 1.00   | 0.00 | 0.83  | 0 - 4 | 2.01           | 19.65          |
| 10       | 0.30  | 0.00   | 0.00 | 0.69  | 0 - 4 | 2.00           | 64.32          |
| 11       | 0.98  | 0.00   | 0.00 | 1.16  | 0 - 7 | 2.00           | 12.07          |
| 12       | 23.58 | 4.00   | 5.15 | 15.58 | 0 -81 | 0.93           | -2.97          |
| 13       | 2.66  | 1.00   | 0.00 | 1.53  | 0 - 7 | 0.87           | 42.47          |

Stimulus Five

| Category | Mean  | Median | Mode | s     | Range | G <sub>1</sub> | G <sub>2</sub> |
|----------|-------|--------|------|-------|-------|----------------|----------------|
| 1        | 0.54  | 0.00   | 0.00 | 0.78  | 0 - 3 | 1.57           | 23.85          |
| 2        | 0.87  | 0.00   | 0.00 | 1.07  | 0 - 4 | 0.98           | 7.14           |
| 3        | 0.43  | 0.00   | 0.00 | 0.79  | 0 - 4 | 2.20           | 26.33          |
| 4        | 0.07  | 0.00   | 0.00 | 0.25  | 0 - 1 | 3.50           | 3410.70        |
| 5        | 0.01  | 0.00   | 0.00 | 0.10  | 0 - 1 | 9.38           | 737098.06      |
| 6        | 1.41  | 1.00   | 0.00 | 1.99  | 0 -12 | 2.34           | -0.74          |
| 7        | 0.21  | 0.00   | 0.00 | 0.53  | 0 - 3 | 2.93           | 171.44         |
| 8        | 0.12  | 0.00   | 0.00 | 0.42  | 0 - 3 | 4.48           | 914.87         |
| 9        | 0.67  | 0.00   | 0.00 | 1.00  | 0 - 5 | 1.83           | 11.06          |
| 10       | 0.20  | 0.00   | 0.00 | 0.54  | 0 - 3 | 3.48           | 203.43         |
| 11       | 0.92  | 0.00   | 0.00 | 1.07  | 0 - 5 | 1.31           | 11.48          |
| 12       | 17.26 | 11.00  | 5.10 | 13.29 | 0 -68 | 1.48           | -2.97          |
| 13       | 2.10  | 2.00   | 2.00 | 1.29  | 1 -10 | 2.96           | 72.54          |

Stimulus Six

| Category | Mean  | Median | Mode  | s     | Range | G <sub>1</sub> | G <sub>2</sub> |
|----------|-------|--------|-------|-------|-------|----------------|----------------|
| 1        | 0.74  | 0.00   | 0.00  | 1.23  | 0 - 8 | 3.01           | 8.65           |
| 2        | 1.54  | 3.00   | 1.00  | 1.56  | 0 - 8 | 1.52           | 4.56           |
| 3        | 0.38  | 1.00   | 0.00  | 0.79  | 0 - 5 | 2.94           | 44.94          |
| 4        | 0.07  | 0.00   | 0.00  | 0.33  | 0 - 2 | 5.15           | 2571.26        |
| 5        | 0.00  | 0.00   | 0.00  | 0.00  | 0     | 0.00           | -3.00          |
| 6        | 1.86  | 5.00   | 0.00  | 2.07  | 0 - 8 | 1.06           | -0.83          |
| 7        | 0.29  | 0.00   | 0.00  | 0.65  | 0 - 3 | 2.50           | 54.34          |
| 8        | 0.09  | 0.00   | 0.00  | 0.38  | 0 - 3 | 5.59           | 1794.17        |
| 9        | 0.41  | 0.00   | 0.00  | 0.75  | 0 - 4 | 2.27           | 36.50          |
| 10       | 0.19  | 0.00   | 0.00  | 0.47  | 0 - 2 | 2.52           | 187.15         |
| 11       | 1.10  | 1.00   | 1.00  | 1.12  | 0 - 5 | 1.20           | 14.70          |
| 12       | 21.67 | 26.00  | 15.00 | 15.76 | 0 -81 | 1.48           | -2.98          |
| 13       | 2.55  | 3.00   | 3.00  | 1.33  | 0 - 6 | 0.67           | 93.96          |

Stimulus Seven

| Category | Mean  | Median | Mode | s     | Range  | G <sub>1</sub> | G <sub>2</sub> |
|----------|-------|--------|------|-------|--------|----------------|----------------|
| 1        | 0.89  | 0.00   | 0.00 | 0.87  | 0 - 8  | 0.71           | 25.03          |
| 2        | 1.36  | 1.00   | 1.00 | 1.80  | 0 - 10 | 2.20           | 0.24           |
| 3        | 0.38  | 0.00   | 0.00 | 0.68  | 0 - 4  | 2.35           | 61.27          |
| 4        | 0.13  | 0.00   | 0.00 | 0.34  | 0 - 1  | 2.18           | 425.06         |
| 5        | 0.00  | 0.00   | 0.00 | 0.00  | 0      | 0.00           | -3.00          |
| 6        | 1.84  | 1.00   | 1.00 | 1.82  | 0 - 8  | 1.48           | 2.00           |
| 7        | 0.22  | 0.00   | 0.00 | 0.53  | 0 - 2  | 2.37           | 99.73          |
| 8        | 0.14  | 0.00   | 0.00 | 0.41  | 0 - 2  | 2.95           | 412.81         |
| 9        | 0.53  | 0.00   | 0.00 | 0.90  | 0 - 5  | 2.18           | 18.39          |
| 10       | 0.41  | 0.00   | 0.00 | 0.70  | 0 - 3  | 1.81           | 33.05          |
| 11       | 0.75  | 0.00   | 0.00 | 0.97  | 0 - 4  | 1.40           | 11.88          |
| 12       | 20.89 | 6.00   | 5.00 | 15.04 | 0 - 74 | 1.29           | -2.97          |
| 13       | 2.40  | 1.00   | 1.20 | 1.37  | 0 - 6  | 0.84           | 58.13          |

Stimulus Eight

| Category | Mean  | Median | Mode  | s     | Range  | G <sub>1</sub> | G <sub>2</sub> |
|----------|-------|--------|-------|-------|--------|----------------|----------------|
| 1        | 1.01  | 1.00   | 0.00  | 1.19  | 0 - 5  | 1.22           | 6.82           |
| 2        | 1.10  | 1.00   | 0.00  | 1.45  | 0 - 7  | 1.86           | 2.46           |
| 3        | 0.26  | 0.00   | 0.00  | 0.63  | 0 - 4  | 3.23           | 111.57         |
| 4        | 0.25  | 0.00   | 0.00  | 0.63  | 0 - 3  | 2.78           | 75.87          |
| 5        | 0.01  | 0.00   | 0.00  | 0.10  | 0 - 1  | 9.38           | 737098.06      |
| 6        | 1.37  | 1.00   | 0.00  | 1.68  | 0 - 8  | 1.70           | 0.91           |
| 7        | 0.33  | 0.00   | 0.00  | 0.62  | 0 - 3  | 1.96           | 56.23          |
| 8        | 0.10  | 0.00   | 0.00  | 0.40  | 0 - 3  | 5.17           | 1407.65        |
| 9        | 0.67  | 0.00   | 0.00  | 0.82  | 0 - 4  | 1.41           | 26.87          |
| 10       | 0.34  | 0.00   | 0.00  | 0.69  | 0 - 3  | 1.93           | 30.79          |
| 11       | 1.14  | 3.00   | 0.00  | 1.33  | 0 - 6  | 1.50           | 5.12           |
| 12       | 23.13 | 23.00  | 15.00 | 14.96 | 0 - 62 | 0.82           | -2.96          |
| 13       | 2.42  | 3.00   | 2.00  | 1.58  | 0 - 10 | 1.87           | 27.14          |

Stimulus Nine

| Category | Mean  | Median | Mode  | s     | Range | G <sub>1</sub> | G <sub>2</sub> |
|----------|-------|--------|-------|-------|-------|----------------|----------------|
| 1        | 0.65  | 2.00   | 0.00  | 0.91  | 0 - 4 | 1.37           | 12.25          |
| 2        | 0.86  | 2.00   | 0.00  | 1.02  | 0 - 4 | 1.05           | 10.44          |
| 3        | 0.37  | 3.00   | 0.00  | 0.78  | 0 - 4 | 2.44           | 28.04          |
| 4        | 0.36  | 2.00   | 0.00  | 0.62  | 0 - 2 | 1.50           | 34.52          |
| 5        | 0.00  | 0.00   | 0.00  | 0.00  | 0     | 0.00           | -3.00          |
| 6        | 1.42  | 1.00   | 0.00  | 1.63  | 0 - 7 | 1.37           | 1.35           |
| 7        | 0.34  | 2.00   | 0.00  | 0.56  | 0 - 2 | 1.41           | 49.59          |
| 8        | 0.08  | 0.00   | 0.00  | 0.27  | 0 - 1 | 3.18           | 2147.22        |
| 9        | 0.58  | 1.00   | 0.00  | 0.94  | 0 - 4 | 1.80           | 11.04          |
| 10       | 0.23  | 0.00   | 0.00  | 0.87  | 0 - 2 | 2.06           | 26.77          |
| 11       | 0.62  | 2.00   | 0.00  | 0.87  | 0 - 5 | 2.06           | 26.77          |
| 12       | 19.91 | 42.00  | 20.00 | 11.25 | 0 -56 | 0.36           | -2.85          |
| 13       | 2.37  | 5.00   | 2.00  | 1.36  | 0 - 7 | 1.27           | 65.03          |

Stimulus Ten

| Category | Mean  | Median | Mode  | s     | Range | G <sub>1</sub> | G <sub>2</sub> |
|----------|-------|--------|-------|-------|-------|----------------|----------------|
| 1        | 0.66  | 0.00   | 0.00  | 0.91  | 0 - 5 | 1.70           | 18.46          |
| 2        | 0.92  | 1.00   | 0.00  | 1.11  | 0 - 5 | 1.19           | 8.16           |
| 3        | 0.74  | 0.00   | 0.00  | 1.18  | 0 - 6 | 2.03           | 5.18           |
| 4        | 0.14  | 0.00   | 0.00  | 0.38  | 0 - 2 | 2.62           | 450.46         |
| 5        | 0.00  | 0.00   | 0.00  | 0.00  | 0     | 0.00           | -3.00          |
| 6        | 1.76  | 1.00   | 0.00  | 2.33  | 0 -10 | 1.48           | -1.90          |
| 7        | 0.35  | 0.00   | 0.00  | 0.67  | 0 - 3 | 2.09           | 42.64          |
| 8        | 0.10  | 0.00   | 0.00  | 0.34  | 0 - 2 | 3.54           | 1261.39        |
| 9        | 0.59  | 0.00   | 0.00  | 1.15  | 0 - 8 | 3.67           | 13.31          |
| 10       | 0.27  | 0.00   | 0.00  | 0.56  | 0 - 3 | 2.30           | 102.96         |
| 11       | 0.86  | 0.00   | 0.00  | 0.98  | 0 - 4 | 1.43           | 15.69          |
| 12       | 21.59 | 8.00   | 15.00 | 15.30 | 0 -77 | 1.34           | -2.97          |
| 13       | 2.40  | 1.00   | 2.00  | 1.37  | 0 - 7 | 0.97           | 61.71          |

Stimulus Eleven

| Category | Mean  | Median | Mode  | s     | Range | G <sub>1</sub> | G <sub>2</sub> |
|----------|-------|--------|-------|-------|-------|----------------|----------------|
| 1        | 0.79  | 1.00   | 0.00  | 0.95  | 0 - 4 | 1.13           | 13.52          |
| 2        | 1.36  | 1.00   | 1.00  | 1.54  | 0 -10 | 2.32           | 5.09           |
| 3        | 0.47  | 0.00   | 0.00  | 0.81  | 0 - 4 | 2.00           | 23.01          |
| 4        | 0.18  | 0.00   | 0.00  | 0.46  | 0 - 3 | 3.34           | 394.19         |
| 5        | 0.01  | 0.00   | 0.00  | 0.00  | 0     | 0.00           | -3.00          |
| 6        | 2.81  | 3.00   | 2.00  | 2.62  | 0 -14 | 1.46           | -0.87          |
| 7        | 0.48  | 2.00   | 0.00  | 0.74  | 0 - 4 | 1.99           | 40.72          |
| 8        | 0.13  | 0.00   | 0.00  | 0.34  | 0 - 1 | 2.18           | 425.06         |
| 9        | 0.52  | 0.00   | 0.00  | 0.79  | 0 - 3 | 1.49           | 18.06          |
| 10       | 0.30  | 0.00   | 0.00  | 0.55  | 0 - 2 | 1.67           | 62.70          |
| 11       | 0.92  | 1.00   | 0.00  | 1.04  | 0 - 6 | 1.60           | 17.83          |
| 12       | 23.80 | 26.00  | 20.00 | 17.26 | 0-116 | 2.11           | -2.98          |
| 13       | 2.67  | 2.00   | 2.00  | 1.81  | 0 -11 | 1.94           | 15.35          |

Stimulus Twelve

| Category | Mean  | Median | Mode  | s     | Range | G <sub>1</sub> | G <sub>2</sub> |
|----------|-------|--------|-------|-------|-------|----------------|----------------|
| 1        | 0.69  | 0.00   | 0.00  | 0.99  | 0 - 4 | 1.49           | 9.54           |
| 2        | 0.86  | 0.00   | 0.00  | 1.00  | 0 - 4 | 1.04           | 12.07          |
| 3        | 0.49  | 0.00   | 0.00  | 0.87  | 0 - 4 | 1.77           | 12.80          |
| 4        | 0.10  | 0.00   | 0.00  | 0.34  | 0 - 2 | 3.54           | 1261.39        |
| 5        | 0.00  | 0.00   | 0.00  | 0.00  | 0     | 0.00           | -3.00          |
| 6        | 1.93  | 0.00   | 0.00  | 2.09  | 0 -10 | 1.51           | -0.35          |
| 7        | 0.40  | 0.00   | 0.00  | 0.79  | 0 - 4 | 2.48           | 29.60          |
| 8        | 0.15  | 0.00   | 0.00  | 0.36  | 0 - 1 | 1.92           | 267.24         |
| 9        | 0.78  | 1.00   | 0.00  | 1.01  | 0 - 5 | 1.56           | 12.40          |
| 10       | 0.26  | 0.00   | 0.00  | 0.55  | 0 - 2 | 1.00           | 70.24          |
| 11       | 0.85  | 0.00   | 0.00  | 1.10  | 0 - 4 | 1.25           | 6.22           |
| 12       | 21.08 | 13.00  | 20.00 | 13.50 | 0 -70 | 1.07           | -2.94          |
| 13       | 2.47  | 2.00   | 2.00  | 1.47  | 0 - 8 | 1.47           | 44.96          |

Stimulus Thirteen

| Category | Mean  | Median | Mode  | s     | Range | G <sub>1</sub> | G <sub>2</sub> |
|----------|-------|--------|-------|-------|-------|----------------|----------------|
| 1        | 0.67  | 0.00   | 0.00  | 0.90  | 0 - 4 | 1.35           | 14.71          |
| 2        | 1.08  | 1.00   | 0.00  | 1.38  | 0 - 6 | 1.56           | 3.04           |
| 3        | 0.31  | 0.00   | 0.00  | 0.64  | 0 - 3 | 2.12           | 45.77          |
| 4        | 0.15  | 0.00   | 0.00  | 0.51  | 0 - 3 | 3.66           | 241.66         |
| 5        | 0.02  | 0.00   | 0.00  | 0.15  | 0 - 1 | 6.52           | 93135.50       |
| 6        | 0.97  | 2.00   | 0.00  | 1.36  | 0 - 6 | 1.68           | 2.42           |
| 7        | 0.15  | 0.00   | 0.00  | 0.39  | 0 - 2 | 2.46           | 365.59         |
| 8        | 0.13  | 0.00   | 0.00  | 0.37  | 0 - 2 | 2.81           | 564.35         |
| 9        | 0.63  | 0.00   | 0.00  | 0.78  | 0 - 4 | 1.32           | 28.00          |
| 10       | 0.20  | 0.00   | 0.00  | 0.52  | 0 - 3 | 3.06           | 190.25         |
| 11       | 0.56  | 0.00   | 0.00  | 0.85  | 0 - 3 | 1.30           | 12.26          |
| 12       | 16.56 | 21.00  | 10.00 | 11.75 | 0 -45 | 0.67           | -2.94          |
| 13       | 2.00  | 2.00   | 1.00  | 1.15  | 0 - 5 | 0.80           | 95.54          |

Stimulus Fourteen

| Category | Mean  | Median | Mode  | s     | Range | G <sub>1</sub> | G <sub>2</sub> |
|----------|-------|--------|-------|-------|-------|----------------|----------------|
| 1        | 0.51  | 0.00   | 0.00  | 0.82  | 0 - 4 | 1.98           | 22.52          |
| 2        | 1.01  | 1.00   | 0.00  | 1.42  | 0 - 5 | 1.20           | 9.07           |
| 3        | 0.20  | 0.00   | 0.00  | 0.43  | 0 - 2 | 1.94           | 180.94         |
| 4        | 0.08  | 0.00   | 0.00  | 0.27  | 0 - 1 | 3.18           | 2147.22        |
| 5        | 0.00  | 0.00   | 0.00  | 0.00  | 0     | 0.00           | -3.00          |
| 6        | 1.82  | 3.00   | 0.00  | 2.00  | 0 - 9 | 1.26           | -0.26          |
| 7        | 0.40  | 1.00   | 0.00  | 0.65  | 0 - 3 | 1.63           | 40.30          |
| 8        | 0.04  | 0.00   | 0.00  | 0.21  | 0 - 1 | 4.45           | 11515.30       |
| 9        | 0.57  | 0.00   | 0.00  | 0.76  | 0 - 3 | 1.35           | 25.47          |
| 10       | 0.37  | 0.00   | 0.00  | 0.64  | 0 - 3 | 1.74           | 42.28          |
| 11       | 0.80  | 0.00   | 0.00  | 0.91  | 0 - 3 | 0.76           | 13.92          |
| 12       | 18.77 | 11.00  | 15.00 | 12.91 | 0 -59 | 1.07           | -2.95          |
| 13       | 2.27  | 1.00   | 1.00  | 1.27  | 0 - 6 | 0.74           | 77.69          |

Stimulus Fifteen

| Category | Mean  | Median | Mode  | s     | Range  | G <sub>1</sub> | G <sub>2</sub> |
|----------|-------|--------|-------|-------|--------|----------------|----------------|
| 1        | 0.55  | 0.00   | 0.00  | 0.86  | 0 - 3  | 1.42           | 11.95          |
| 2        | 0.89  | 0.00   | 0.00  | 1.20  | 0 - 4  | 1.26           | 3.64           |
| 3        | 0.44  | 1.00   | 0.00  | 0.71  | 0 - 3  | 1.54           | 25.68          |
| 4        | 0.07  | 0.00   | 0.00  | 0.31  | 0 - 2  | 4.70           | 2886.78        |
| 5        | 0.01  | 0.00   | 0.00  | 0.12  | 0 - 1  | 8.25           | 347898.00      |
| 6        | 0.93  | 1.00   | 0.00  | 1.76  | 0 - 8  | 2.55           | -0.90          |
| 7        | 0.34  | 0.00   | 0.00  | 0.67  | 0 - 3  | 2.29           | 47.22          |
| 8        | 0.04  | 0.00   | 0.00  | 0.20  | 0 - 1  | 4.55           | 12883.28       |
| 9        | 0.45  | 0.00   | 0.00  | 0.82  | 0 - 4  | 2.08           | 20.66          |
| 10       | 0.10  | 0.00   | 0.00  | 0.47  | 0 - 2  | 2.33           | 172.68         |
| 11       | 0.93  | 1.00   | 0.00  | 1.13  | 0 - 6  | 1.77           | 11.39          |
| 12       | 17.82 | 18.00  | 10.00 | 14.57 | 0 - 63 | 1.29           | -2.98          |
| 13       | 2.10  | 3.00   | 1.00  | 1.40  | 0 - 9  | 2.14           | 13.76          |